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THE CITADEL
GRADUATE COLLEGE

2019-2020
ACADEMIC CATALOG



THE CITADEL GRADUATE COLLEGE

www.citadel.edu/cgc
(843) 953-5089
cgc@citadel.edu

The Citadel Graduate College (CGC)

171 Moultrie Street
Charleston, SC 29409
(843) 953-5089

www.citadel.edu/graduatecollege

www.citadel.edu/eveningundergraduatestudies

Please refer to the CGC website for frequently called numbers, schedule of courses, term dates, fees, and other important information.

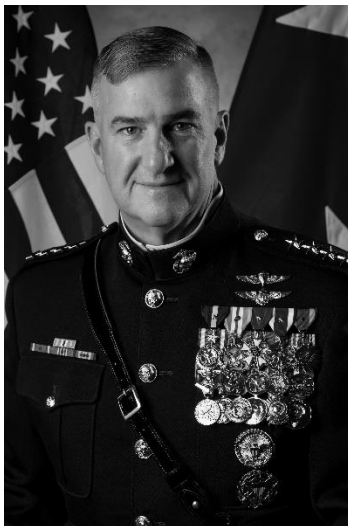
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Graduate Degree Programs				
Degree	Program	Coordinator	Email	Page
Tommy and Victoria Baker School of Business				
MBA	Master of Business Administration	Dr. Jeremy Bennett Mr. Brian Tucker	jbennet5@citadel.edu btucker2@citadel.edu	35
Department of Leadership Studies				
M.S.	Master of Science in Leadership	Dr. John Altick	jaltick@citadel.edu	38
School of Engineering				
M.S.	Master of Science in Project Management	Dr. David Greenburg	dgreenbu@citadel.edu	40
M.S.	Master of Science in Civil Engineering	Dr. William Davis	jeff.davis@citadel.edu	42
M.S.	Master of Science in Electrical Engineering	Dr. Robert Barsanti	robert.barsanti@citadel.edu	44
M.S.	Master of Science in Mechanical Engineering	Dr. Robert Rabb	rrabb@citadel.edu	46
School of Humanities and Social Science				
M.A.	Master of Arts in English	Dr. James Hutchisson	hutchissonj@citadel.edu	49
M.A.	Master of Arts in History	Dr. Keith Knapp	knappk@citadel.edu	51
M.A.	Master of Arts in Intelligence and Security Studies	Dr. Carl Jensen	cjensen1@citadel.edu	54
M.A.	Master of Arts in International Politics and Military Affairs	Dr. Sarah Tenney	tenneys1@citadel.edu	56
M.A.	Master of Arts in Military History	Dr. David Preston	preston1@citadel.edu	57
M.A.	Master of Arts in Social Science	Dr. Terry Mays	terry.mays@citadel.edu	59
M.A.	Master of Arts in Psychology: Clinical Counseling	Dr. Genelle Sawyer	genelle.sawyer@citadel.edu	61
Ed.S.	Specialist in Education in School Psychology	Dr. Timothy Hanchon	tim.hanchon@citadel.edu	64
Swain Family School of Science and Mathematics				
M.A.	Master of Arts in Biology	Dr. Paul Nolan	paul.nolan@citadel.edu	67
M.A.	Accelerated Master of Arts in Biology	Dr. Paul Nolan	paul.nolan@citadel.edu	68
M.S.	Master of Science in Computer and Information Sciences	Dr. Michael Verdicchio	mv@citadel.edu	69
M.S.	Master of Science in Health, Exercise, & Sport Science Optional Concentration in Tactical Performance and Resiliency	Dr. Christopher Sole Dr. Chris Bellon	csole@citadel.edu cbellon@citadel.edu	70 72
M.A.	Master of Arts in Sport Management	Dr. Stavros Triantafyllidis	striantaf@citadel.edu	74
Zucker Family School of Education				
MAT	Master of Arts in Teaching – Secondary Education Biology English Mathematics Social Studies	Dr. Tammy Graham Dr. Kristy Johnson Dr. Tom Thompson Dr. Richard Robinson Dr. Katherine Grenier	tammy.graham@citadel.edu johnsonk1@citadel.edu thompsonst@citadel.edu rrobins4@citadel.edu grenierk@citadel.edu	79
MAT	Master of Arts in Teaching – Middle Grades English Mathematics Science Social Studies	Dr. Tammy Graham Dr. Tom Thompson Dr. Richard Robinson Dr. Kristy Johnson Dr. Katherine Grenier	tammy.graham@citadel.edu thompsonst@citadel.edu rrobins4@citadel.edu johnsonk1@citadel.edu grenierk@citadel.edu	82
MAT	Master of Arts in Teaching – Physical Education	Dr. Timothy Bott Dr. Ryan Sacko	bottt1@citadel.edu rsacko@citadel.edu	85
M.Ed.	Master of Education in Counselor Education – Elementary and Secondary	Dr. Aaron Oberman	obermana1@citadel.edu	87
M.Ed.	Master of Education in Educational Leadership – Elementary and Secondary	Dr. Lee Westberry	lwestber@citadel.edu	91
M.Ed.	Master of Education in Higher Education Leadership	Dr. Aaron Oberman	obermana1@citadel.edu	94
M.Ed.	Master of Education in Interdisciplinary STEM Education	Dr. Jennifer Albert	jalbert@citadel.edu	97
M.Ed.	Master of Education in Literacy Education	Dr. Robin Jocius	robin.jocius@citadel.edu	98
Ed.S.	Specialist in Educational Leadership – School Superintendent	Dr. Lee Westberry	lwestber@citadel.edu	100

Graduate Certificate Programs				
Degree	Program	Coordinator	Email	Page
Cert.	Graduate Certificate in Aeronautical Engineering	Dr. Robert Rabb	rrabb@citadel.edu	103
Cert.	Graduate Certificate in Built Environment and Public Health	Dr. William Davis	jeff.davis@citadel.edu	104
Cert.	Graduate Certificate in Composites Engineering	Dr. Robert Rabb	rrabb@citadel.edu	105
Cert.	Graduate Certificate in Computer Engineering	Dr. Robert Barsanti	robert.barsanti@citadel.edu	106
Cert.	Graduate Certificate in Cybersecurity	Dr. Michael Verdicchio	mv@citadel.edu	107
Cert.	Graduate Certificate in Environmental Studies	Dr. Paul Nolan	paul.nolan@citadel.edu	108
Cert.	Graduate Certificate in Geotechnical Engineering	Dr. William Davis	jeff.davis@citadel.edu	109
Cert.	Graduate Certificate in Higher Education Leadership	Dr. Aaron Oberman	obermana1@citadel.edu	110
Cert.	Graduate Certificate in Hispanic Studies	Dr. Silvia Roca-Martinez	srocamar@citadel.edu	111
Cert.	Graduate Certificate in History and Teaching Content	Dr. Keith Knapp	knappk@citadel.edu	112
Cert.	Graduate Certificate in Information Systems	Dr. Michael Verdicchio	mv@citadel.edu	113
Cert.	Graduate Certificate in Intelligence Analysis	Dr. Carl Jensen	cjensen1@citadel.edu	114
Cert.	Graduate Certificate in Leadership	Dr. John Altick	jaltick@citadel.edu	116
Cert.	Graduate Certificate in Literacy Education	Dr. Robin Jocius	robin.jocius@citadel.edu	117
Cert.	Graduate Certificate in Manufacturing Engineering	Dr. Robert Rabb	rrabb@citadel.edu	118
Cert.	Graduate Certificate in Mechatronics Engineering	Dr. Robert Rabb	rrabb@citadel.edu	119
Cert.	Graduate Certificate in Military Leadership	Dr. John Altick	jaltick@citadel.edu	120
Cert.	Graduate Certificate in Power and Energy Engineering	Dr. Robert Rabb	rrabb@citadel.edu	121
Cert.	Graduate Certificate in Software Engineering	Dr. Michael Verdicchio	mv@citadel.edu	122
Cert.	Graduate Certificate in Sport Management	Dr. Stavros Triantafyllidis	striantaf@citadel.edu	123
Cert.	Graduate Certificate in Structural Engineering	Dr. William Davis	jeff.davis@citadel.edu	124
Cert.	Graduate Certificate in Student Affairs	Dr. Aaron Oberman	obermana1@citadel.edu	125
Cert.	Graduate Certificate in Systems Engineering Management	Dr. David Greenburg	dgreenbu@citadel.edu	126
Cert.	Graduate Certificate in Tactical Performance and Resiliency	Dr. Chris Bellon	cbellon@citadel.edu	127
Cert.	Graduate Certificate in Technical Program Management	Dr. David Greenburg	dgreenbu@citadel.edu	128
Cert.	Graduate Certificate in Technical Project Management	Dr. David Greenburg	dgreenbu@citadel.edu	129
Cert.	Graduate Certificate in Transportation Engineering	Dr. William Davis	jeff.davis@citadel.edu	130
Evening/Online Undergraduate Degree Programs				
B.A.	Bachelor of Arts in Criminal Justice	Dr. Robert McNamara	bob.mcnamara@citadel.edu	132
B.A.	Bachelor of Arts in Intelligence and Security Studies	Dr. Carl Jensen	cjensen1@citadel.edu	134
B.A.	Bachelor of Arts in Political Science	Mr. Brad Collins	collinsb1@citadel.edu	136
B.S.	Bachelor of Science in Business Administration	Dr. Jeremy Bennett Mr. Brian Tucker	jbennet5@citadel.edu btucker2@citadel.edu	138
B.S.	Bachelor of Science in Nursing	Dr. Amy Joseph	ajoseph1@citadel.edu	140
B.S.	Bachelor of Science in Social Studies Education	Dr. Tammy Graham	tammy.graham@citadel.edu	142
B.S.	Bachelor of Science in Tactical Performance and Resiliency	Dr. Chris Bellon	cbellon@citadel.edu	144
B.S.	Bachelor of Science in Civil Engineering	Dr. William Davis	jeff.davis@citadel.edu	145
B.S.	Bachelor of Science in Construction Engineering	Dr. Williams Davis	jeff.davis@citadel.edu	148
B.S.	Bachelor of Science in Electrical Engineering	Dr. Robert Barsanti	robert.barsanti@citadel.edu	151
B.S.	Bachelor of Science in Mechanical Engineering	Dr. Robert Rabb	rrabb@citadel.edu	155

Welcome to The Citadel Graduate College, where we extend our mission to educate and develop principled leaders for all walks of life to those seeking further study to become leaders in their chosen fields. We take great pride in our distinguished faculty and excellent academics that combine to offer a unique learning environment. You will find that our students - your friends, neighbors and colleagues - have chosen the CGC because they know it will equip them for the challenges they will face as they advance in their careers. We hope you will join the ranks of more than 9,500 CGC alumni for whom a graduate degree from The Citadel was a stepping stone to continued growth and success.



Glenn M. Walters, '79
General, USMC (Retired)
President, The Citadel

Board of Visitors

Pursuant to S.C. Code Ann Section 59-121-10, the Board of Visitors is composed of the Governor, the Adjutant General, the State Superintendent of Education (who are members ex-officio), and eleven others who are graduates of the College. Seven of these members are elected by joint vote of the General Assembly, three are elected by such means and methods as may be determined by The Citadel Alumni Association, and one is appointed by the Governor.

Additionally, the Board currently has three Emeritus Members. Emeritus Members are former Board members who served at least eighteen years, and were voted as such because of their significant contribution to the governance of the College.

The 2019-2020 Board of Visitors, listed in order of seniority, are:

Colonel Fred L. Price, Jr., '75, Chair
Colonel Myron C. Harrington, Jr., USMC (Retired), '60, Vice Chair
Colonel Allison Dean Love, CGC, '93
Colonel Dylan W. Goff, '02
Colonel Peter M. McCoy, Sr., '74
Colonel L.E. "Gene" Pinson, '72
Colonel Stanley L. Myers, Sr., '98
Colonel John C. Dominick, USAF (Retired), '71
Colonel James E. Nicholson, Jr., '85
Colonel F. Gregory Delleney, Jr., '74
Colonel Robert E. Lyon, Jr., '71



The Honorable Henry D. McMaster, Governor of the State of South Carolina, *Ex Officio*
Major General R. Van McCarty, '82, Adjutant General of South Carolina, *Ex Officio*
The Honorable Molly M. Spearman, State Superintendent of Education, *Ex Officio*
Colonel Leonard C. Fulghum, Jr., '51, Chairman Emeritus
Colonel William E. Jenkinson III, '68, Member Emeritus
Colonel Douglas A. Snyder, '82, Member Emeritus

The Citadel's Statement of Vision, Core Values, and Mission

Statement of Vision

Achieving excellence in the education and development of principled leaders

Core Values

Honor: First and foremost honor includes adherence to the Honor Code of The Citadel. A Citadel student “will not lie, cheat or steal, nor tolerate those who do.” The commitment to honor extends beyond the gates of The Citadel and is a life-long obligation to moral and ethical behavior. In addition, honor includes integrity; “doing the right thing when no one is watching.” Finally, honorable behavior includes exercising the moral courage to “do the right thing when everyone is watching.” The Honor Code is the foundation of our academic enterprise.

Duty: First and foremost duty means to accept and accomplish the responsibilities assigned to me. At The Citadel, my primary duty is to perform academically and then to perform as a member of The Citadel and the campus community. I accept the consequences associated with my performance and actions. Once I have held myself accountable for my actions, then I will hold others accountable for their actions.

Finally, duty means that others can depend on me to complete my assignments and to assist them with their assignments. Duty is also a call to serve others before self.

Respect: First and foremost respect means to treat other people with dignity and worth – the way you want others to treat you. Respect for others eliminates any form of prejudice, discrimination, or harassment (including but not limited to rank, position, age, race, color, gender, sexual orientation, national origin, religion, physical attributes, etc.). In addition, respect for others means to respect the positions of those in authority which include faculty, staff, administrators, active duty personnel, and the leadership of The Citadel. Finally, respect includes a healthy respect for one's self.

Mission

As a higher education institution, The Citadel's mission is to educate and develop our students to become principled leaders in all walks of life by instilling the core values of The Citadel in a disciplined and intellectually challenging environment. A unique feature of this environment for the South Carolina Corps of Cadets is the sense of camaraderie produced through teamwork and service to others while following a military lifestyle.

The Citadel strives to produce graduates who have insight into issues, ideas, and values that are of importance to society. It is equally important that Citadel graduates are capable of both critical and creative thinking, have effective communication skills, can apply abstract concepts to concrete situations, and possess the methodological skills needed to gather and analyze information.

Throughout its history, The Citadel's primary purpose has been to educate undergraduates as members of the South Carolina Corps of Cadets and to prepare them for post-graduate positions of leadership through academic programs of recognized excellence supported by the best features of a military environment. The cadet lifestyle provides a structured environment that supports growth and development of each student's intellect, discipline, physical fitness, and moral and ethical values. The four pillars which define The Citadel experience for cadets consist of these four developmental dimensions.

A complementary purpose of The Citadel, realized through The Citadel Graduate College, is to provide the citizens of the Lowcountry and the State of South Carolina opportunities for professional development by offering a broad range of educational programs of recognized excellence at both the graduate and undergraduate levels. These programs are designed to accommodate the needs of non-traditional students seeking traditional and demanding academic challenges.

Institutional Characteristics. The Citadel is a coeducational, comprehensive, public, four-year institution whose primary undergraduate student body consists of approximately 2,000 members of the Corps of Cadets, all of whom reside on campus. The primary service area for these students is regional, with approximately half of each freshman class coming from South Carolina. The Citadel, however, does draw undergraduate students from all parts of the United States and many foreign countries. The college offers a wide range of baccalaureate degree programs (Bachelor of Arts, Bachelor of Science, Bachelor of Science in Business Administration, Bachelor of Science in Civil Engineering, and Bachelor of Science in Electrical Engineering) in the humanities, social and natural sciences, business administration, engineering, and education. These academic programs prepare graduates of the Corps of Cadets for a variety of careers; about half of these graduates enter business and the professions, a third or more enter the military and government service, and the remainder go directly into graduate and professional study. Many graduates choose to pursue professional or graduate degrees later in their careers.

Through its undergraduate and graduate programs, The Citadel Graduate College serves a degree-seeking population of approximately 1,200. The primary service area is the South Carolina Lowcountry. The Citadel Graduate College offers eleven baccalaureate degree programs (Bachelor of Science in Business Administration, Bachelor of Science in Civil Engineering, Bachelor of Science in Construction Engineering, Bachelor of Science in Electrical Engineering, Bachelor of Science in Mechanical Engineering, Bachelor of Science in Nursing, Bachelor of Science in Tactical Strength and Conditioning, Bachelor of Arts in Social Studies Education, Bachelor of Arts in Intelligence and Security Studies, Bachelor of Arts in Political Science, and Bachelor of Arts in Criminal Justice), seven graduate degree programs (Master of Arts, Master of Science, Master of Arts in Education, Master of Arts in Teaching, Master of Education, Master of Business Administration, and Specialist in Education) and several graduate certificate programs. Meeting the needs of the South Carolina Lowcountry in terms of instruction, public service, and research, including such initiatives as cooperative programs with other educational institutions, is an important part of The Citadel's mission.

Together, the Corps of Cadets and The Citadel Graduate College enroll approximately 3,200 students, about three-fourths of whom come from South Carolina. In its educational programs, The Citadel acknowledges and endorses the teacher-scholar ideal, recognizing that the excellence of all of its academic programs is dependent upon the quality of its faculty. This ideal is pursued through teaching and lecturing, researching, writing, publishing, and public service. The Citadel's faculty also address audiences beyond the college by sharing their knowledge with other scholars and with the public.

The Citadel Graduate College's Mission/Purpose

An important component of a positive educational experience for students involves an intentional effort to meet their needs and offer service that underscores The Citadel Graduate College's commitment to principled leadership.

- **Service:** Creating a culture that values service, fosters mutual respect, and makes the student's needs the most important priority; implementing new technologies that enhance our services; and providing timely, efficient, and accurate information to all requests.
- **Performance:** By ensuring a quality educational experience through administrative oversight of programs and the regular review of policies and procedures; conducting analysis of existing data and generating reports to identify patterns and trends within the Graduate College; creating research opportunities for students and faculty; and assisting departments with implementing creative delivery methods of academic programs.
- **Integration:** By providing welcoming and rewarding experiences, graduate students and evening undergraduates, both past and present, feel a part of the larger Citadel community and play an important and significant role on campus.

Accreditation

The Citadel is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award baccalaureate, masters, and specialist in education degrees. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, Georgia 30033-4097 or call 404-679-4500 for questions about the accreditation of The Citadel.

Normal inquiries about the institution, such as admission requirements, financial aid, educational programs, etc., should be addressed directly to The Citadel and not to the Commission's office. The Commission should be contacted only if there is evidence that appears to support a significant non-compliance with a requirement or standard.

Programs for the preparation of teachers at the bachelor's and master's levels, school counselors at the master's level, school psychologists at the specialist degree level, and school principals and superintendents at the master's and specialist degree levels, are accredited by the Council for Accreditation of Educator Preparation (CAEP). The head of the Department of Education in the Zucker Family School of Education serves as the Director of Teacher Education.

The Tommy and Victoria Baker School of Business Administration is accredited by the Association for the Advancement of Collegiate Schools of Business (AACSB) International.

The Bachelor of Science in Nursing is accredited by the Commission on Collegiate Nursing Education, www.ccnaccreditation.org.

The Clinical Counseling program is accredited by the Masters in Psychology and Counseling Accreditation Council.

The Computer Science programs as well as the Civil, Electrical, and Mechanical Engineering programs are accredited by the Engineering Accreditation Commission of ABET, www.abet.org.

The School Counseling Programs that offer a Master of Education in Counselor Education (Elementary or Secondary School Counseling Certification) are fully accredited by the Council for Accreditation of Counseling and Related Educational Programs (CACREP).

The School Psychology Program is fully accredited by the National Association of School Psychologists.

Full Fall Semester	
Date	Description
8/19/19	Payment for fall 2019 classes due in the Treasurer's Office (by 4:00pm).
8/20/19	College of Charleston fall 2019 classes begin.
8/26/19	Fall 2019 CGC classes begin for full semester.
8/27/19	College of Charleston last day to add or drop a full semester class.
9/2/19	Labor Day Holiday - No CGC classes.
9/9/19	CGC - Last day to add or drop fall 2019 full semester courses and receive a refund.
9/27/19	Deadline for filing applications for degree and certificate completion in the Registrar's Office.
10/25/19	College of Charleston - last day to withdraw with a grade of "W".
10/28/19	Eligible currently enrolled students may begin registering at midnight for spring 2019 and summer 2019 classes.
10/29/19	CGC - last day to withdraw with a grade of "W" from a full semester course.
11/11/19	All students may begin registering for spring 2019 and summer 2019 classes.
11/22/19	CGC fall break begins.
12/2/19	CGC classes resume.
12/11/19	Last day of College of Charleston classes.
12/12/19	Last day of classes for CGC. Last day to resolve graduate incomplete grades from previous semester.
12/13/19	CGC exams begin.
12/18/19	CGC exams end.
12/23/19	The Citadel closes for the holidays.
Graduate First Eight Weeks Session	
Date	Description
8/19/19	First 8 weeks classes begin.
8/22/19	Last day to add/drop a first 8 weeks class.
9/15/19	Last day to withdraw from first 8 weeks courses with a "W".
10/13/19	Last day of first 8 weeks classes.

Graduate Second Eight Weeks Session	
Date	Description
10/21/19	Second 8 weeks classes begin.
10/24/19	Last day to add or drop a second 8 weeks class.
11/17/19	Last day to withdraw from second 8 weeks courses with a "W".
12/15/19	Last day of second 8 weeks classes.
Full Spring Semester	
Date	Description
1/13/20	Spring 2020 CGC classes begin for full semester.
1/20/20	Martin Luther King Jr. Holiday – no CGC classes.
1/27/20	Last day to add or drop a course, or change sections.
3/13/20	Spring break begins after last class.
3/17/20	Last day to withdraw with a grade of "W".
3/23/20	Classes resume.
3/30/20	Currently enrolled students begin registration for fall 2020.
4/6/20	All students begin registration for fall 2020.
4/27/20	Classes end.
4/28-5/4	Final exams.
4/30/20	Deadline for removal of incomplete grades from fall 2019 semester.
5/6/20	Graduating students' grades due by 10:00am.
5/7/20	Remaining grades due by 10:00am.
5/9/20	CGC Graduation. Summer break begins.

Purpose of the CGC Catalog

This catalog should not be construed as the basis of a contract between a student and The Citadel. Every effort is made to provide information in the catalog that is accurate at the time the catalog is prepared. However, information on regulations, policies, fees, curricula, courses, and other matters is subject to change at any time during the period for which the catalog is in effect.

Each program of study shall be governed by the program requirements in effect on the date of enrollment. If a student withdraws from the college or fails to maintain enrollment for one year and subsequently returns, the requirements in effect at the time of return will prevail. Any exception to policies in this catalog, purported to have been made verbally to a student by an official of the college, are null and void unless documented with a signed statement from the college official authorized to make the exception.

This catalog is not an unchangeable contract but an announcement of the current policies. Implicit in each student's matriculation at The Citadel is an unwritten agreement to comply with the institution's rules and regulations, which The Citadel may modify to ensure the quality of its academic programs. When graduation requirements are changed, every effort will be made to insure that the new requirements can be met by the student's original expected graduation date. Nonetheless, each student is expected to read and be aware of the policies and procedures contained in the catalog in order to assure that admissions, registration, and graduation procedures are being followed. The college cannot assume responsibility for a student who does not comply with policy or procedure.

Admission and Enrollment Policies

Application and Admissions

The application process at The Citadel Graduate College (CGC) is a two-part process that occurs simultaneously. The applicant must be accepted into the CGC and the program to which he/she seeks a degree. Requirements for acceptance into the CGC include:

- Completion of the online graduate application along with the non-refundable application fee.
- Submission of an official transcript reflecting the highest degree earned from a regionally accredited college or university. Additional transcripts may be required depending on undergraduate course requirements by program.
- Other supplemental items, which may include official test scores (GMAT, GRE or MAT; see program requirements for acceptable test and test scores), as required by the program.

Upon receipt of an application, each applicant is sent an email acknowledging the application. The applicant can log into the application portal to view a list of required supplemental items at any time.

The requirements for acceptance into specific programs and degrees are described in this catalog for each program/degree. If accepted, official copies of all admissions documents must be sent directly to the CGC office, and admission test scores (if required) must be current within five years of application.

Full acceptance is not granted until both the CGC and program requirements are met. After acceptance by the program, any non- U.S. citizen must be cleared for registration by The International Office. The TOEFL test is required of any applicant whose native language is not English, unless granted an exception. Upon acceptance, a letter is sent to the student identifying their faculty advisor. Students are encouraged to schedule an appointment with them.

While each program has its own set of admissions requirements, ultimate authority to admit a student rests with the provost or designee. Normally departments and programs have the authority to determine admissions criteria and the provost intervenes only in unusual or extraordinary circumstances. However the decision by the provost as the chief academic officer for the college is final.

Legal Presence and Residency

The State of South Carolina requires all state colleges and universities to verify each student's legal presence in the United States. Prior to starting classes, each student will be required to submit a photocopy of their birth certificate or valid U.S. passport.

Drop/Add and Withdrawals

Formal notice of intent to drop or withdraw from any class is necessary in all cases. The dates for dropping and withdrawing are listed in the term calendar at <http://www.my.citadel.edu/root/registrar-important-dates>. To drop

or add a course from the course schedule or to change sections within a course, a student must drop/add through Lesesne Gateway. Approval to drop a course and receive a refund after the published drop date is granted only under extenuating circumstances (i.e. death in immediate family, serious medical issues, deployment). After the drop period, students who choose to withdraw must complete a withdrawal form available in the Registrar's Office or online.

Course withdrawal means a student is withdrawing from a course after the drop/add date has passed. A grade of "W" will appear on the student transcript. The "W" does not affect the student's grade point average (GPA). Ceasing to attend a course does not constitute an official drop or withdrawal from the course. Any withdrawal request that occurs after the published withdrawal date must have a written justification for the late request to accompany the withdrawal form. Late withdrawal requests will be approved on a case-by-case basis by both the academic dean and the Graduate College.

Joint Degree Programs

The Citadel participates in joint graduate degree and certificate programs with the College of Charleston in Computer Science, English, History, and Middle School Education. Students routinely take courses at both institutions. Citadel students will register for all their Computer Science, English, History, or Education courses at The Citadel, even when a particular course may be offered at the College of Charleston. Students who have declared a home institution must complete at least 33% of their coursework at that institution. More specific information is available on our webpage, www.citadel.edu/root/graduatecollege-prospective-students/joint-programs.

Orientation

All students are encouraged to visit the Orientation webpage to become familiar with the student services available to them. The webpage is www.citadel.edu/root/graduatecollege-current-students/orientation.

Registration

Registration is conducted online through Lesesne Gateway. Students may not attend class until they are fully registered. Completed registrations will be honored on a first-come, first-served basis. Registration is not completed until all fees are paid. All fees are due by published calendar dates. Knowingly attending class without paying is an integrity violation and will result in dismissal from the college. Any changes in registration must be made prior to the end of the term's Drop/Add period. Information concerning class times and important registration dates can be found for each academic term online at <http://www.citadel.edu/root/registrar-courses>.

Completion of coursework for a program in which a student has not been formally accepted does not imply admission into that program. A student should pursue no more than 8 credit hours of coursework for a program to which they have not been formally accepted.

Transcripts and Transfer Credit

Graduate students applying for transfer credit will use the "Transfer Credit for Graduate Programs" form located online at <http://www.my.citadel.edu/root/registrar-forms>. The form will be submitted to the Registrar's Office through the student's advisor and department head with a copy of the course description from the catalog of the originating institution and the course syllabus. An official copy of the transcript for the institution where the credit was earned must be on file with the Graduate College. Approval is granted by the student's department, contingent upon Citadel policy. Only courses with a "B" or higher are acceptable for transfer from accredited colleges and universities (e.g. Southern Association of Colleges, North Central Association of Colleges and Schools, etc.). Undergraduate students should refer to the undergraduate section of the catalog for transfer credit information.

Veteran's Status as a Student on The Citadel Campus

This policy prescribes rules and regulations related to veteran students on campus. It defines the types of veteran students, the policies related to student status (cadet vs. non-cadet), as well as enrollment requirements, registration, and commencement exercise attendance.

Definitions:

Citadel Cadet Veteran: A cadet serving in the National Guard or reserve component of one of the Armed Services who is called to active federal duty other than for training, while a member of the Corps of Cadets can return to The Citadel as a veteran day student as long as the former cadet receives a DD-214 indicating an Honorable Discharge from active duty. If the candidate has completed four semesters as a cadet, he/she will be eligible to receive the cadet ring and diploma once academic requirements are met.

Citadel Non-Cadet Veteran Day Student: Veterans who provide evidence with a DD-214 (honorable discharge) from one of the Armed Services indicating a minimum of 90 consecutive days of full-time federal active service, other than active duty for training, may be eligible to apply to our daytime program as full-time degree-seeking students. That application would be made through our Office of Admissions. These veterans are civilians and are not subject to the personal requirements specific to the Corps of Cadets. They will not be subject to the RPED or ROTC requirements. Furthermore, they must not have a record of conviction for a criminal offense showing poor moral character.

Active Duty Student: Other day veteran students with different military affiliations enrolled at The Citadel include: MECEP, STA-21, AECP, and Green to Gold students, who are full-time day students.

Evening Undergraduate Veteran Student: This group of Veterans declare their degree completion program of study through The Citadel Graduate College. To be classified as an Evening Undergraduate Veteran student, applicants must provide evidence with a DD-214 (honorable discharge) from one of the Armed Services indicating a minimum of 90 consecutive days of full-time

federal active service, other than active duty for training. This application is completed through the Graduate College office. These veterans are civilians and are not subject to the personal requirements specific to the Corps of Cadets. They will not be subject to the RPED or ROTC requirements. Furthermore, they must not have a record of conviction for a criminal offense showing poor moral character.

All Veteran students must declare either the day/cadet or Evening Undergraduate Studies programs when they begin taking classes at The Citadel. Veterans who declare themselves day students must follow the South Carolina Corps of Cadets general education requirements and attend the day program commencement ceremony. Veterans who declare their status as evening students must meet Evening Undergraduate Studies general education requirements and attend The Citadel Graduate College commencement exercises.

Veterans may change their official student status once in their time as a student at The Citadel. Exceptions to this rule must be approved by the Associate Provost for Academic Affairs.

Veteran students may enroll in day or evening classes and will receive priority registration.

Admission Policy (Graduate Students)

The Citadel Graduate College seeks to enroll students whose motivation and educational backgrounds demonstrate a strong potential for success in the academic program of their choice. Specific entrance requirements are detailed in other sections of this catalog, but every applicant for a graduate degree must submit to the CGC office:

1. An application with a non-refundable fee;
2. Official transcripts reflecting the highest degree earned from a regionally accredited college or university. Unofficial copies can be used for application review purposes. Official copies are required at the time of admission.
3. An official TOEFL score if English is not the native language. The minimum acceptable score of 550 paper-based, 213 computer-based, or 79 internet-based;
4. Additional documentation may be requested for verification of U.S. Citizenship.

Admission and Student Categories

Graduate students may be admitted to CGC in one of the below categories.

Degree seeking - A graduate student is classified as degree seeking if he/she holds a bachelor's degree or an advanced degree, all admission requirements are met and the student has been admitted to a degree program. To obtain this classification a student must:

1. Complete the graduate application along with the non-refundable application fee.
2. Submit an official transcript reflecting the highest degree earned from a regionally accredited college or university. Additional transcripts may be required depending on undergraduate course requirements by program. Unofficial copies can be used for application review purposes. Official copies are required at the time of admission.
3. Submit an official TOEFL score if native language is not

English. The minimum acceptable score is 550 paper-based, 213 computer-based, or 79 internet-based.

4. Additional admission requirements for specific programs are outlined in the information provided for each degree program.

Non-degree seeking - A graduate student is classified as non-degree seeking if he/she holds a bachelor's degree or an advanced degree but who, at the time of the application, does not plan to pursue a degree. This category authorizes the student to take no more than 8 hours total for which he/she has the prerequisites. It does not imply admission to a degree program. Persons admitted to the non-degree student status who later wish to become degree seeking must file an application for the desired program and comply with the requirements stated above in "Degree Seeking." Program requirements will dictate the number of hours in non-degree status that will be accepted into any program. No student shall register beyond 8 hours without being fully accepted into a degree program. Exception requests must be made in writing and will be approved by The Citadel Graduate College and academic dean on a case-by-case basis.

To obtain non-degree classification the student must:

1. Complete the graduate application along with the non-refundable application fee.
2. Submit an unofficial transcript reflecting the highest degree earned from a regionally accredited college or university. Additional transcripts may be required depending on undergraduate course requirements by program.
3. Graduate transient students who wish to enroll in course work for transfer to another institution must present an unofficial transcript at the time of application. This transcript can be used as evidence they have met any course prerequisites.

Senior Citizens - South Carolina Senior citizens, those who are age 60 and over and legal residents of the state, who wish to take courses at The Citadel Graduate College are eligible to enroll as a degree-seeking or non-degree seeking student on a space available basis. If a student wishes to pursue a degree, they must submit an application for the program of study and follow the appropriate admissions protocol. Up to 12 credit hours taken as a non-degree seeking student may be transferred into the program. Proof of age (SC Driver's License) is required at the time of application.

Registration for classes as a senior citizen is allowed on a space available basis—the timeline for registration is the Monday prior to the start of each semester. Additionally, permission from the instructor may be needed to take a course as a non-degree student. Students are encouraged to request this permission ahead of time and forward the approval in writing to the Registrar's Office at registrar@citadel.edu.

International Students - An international student who applies to a graduate program at The Citadel must complete the following requirements before enrolling in classes:

1. Have completed a degree equivalent to an American baccalaureate degree.
2. Have his/her academic credentials officially evaluated with a course-by-course evaluation by a member of the National Association of Credential Evaluation Services (NACES) and sent directly from that organization to the CGC office. Unofficial copies can be used for application review purposes. Official copies are required at the time of admission.
3. Meet all the admission criteria for the desired graduate degree program.

4. Provide completed CGC Immigration Request form.
5. Submit an official TOEFL score if native language is not English. The minimum acceptable score is 550 paper-based, 213 computer-based, or 79 internet-based.

*Applicants may be exempted from the TOEFL requirement if the applicant has a minimum of 2 years of course study, with a 3.0 or higher GPA, from an institution accredited by a regional accrediting association in the United States, or the international equivalent from a university of recognized standing in a country in which all instruction is provided in English. Therefore, applicants with completed coursework from the U.S., Australia, Canada (except Quebec), New Zealand, Singapore, and the United Kingdom (England, Scotland, Ireland, Wales) may be eligible for an exemption. All exemption requests must be made in writing to The Citadel Graduate College and be accompanied by the domestic transcripts showing the minimum requirements for a waiver have been met. Other exceptions may be considered on a case by case basis with written justification and supporting documentation submitted to The Citadel Graduate College for review.

6. If applying for a student visa or transferring a student visa from another institution, must provide evidence of ability to meet all financial obligations while in graduate study at The Citadel by completing the Certification of Finances form prior to enrolling in courses.
7. International students may not register before full acceptance into a degree program and clearance from the International Student Director.

Evening Undergraduate Students - Please refer to the Evening Undergraduate Programs Procedure section.

Provisional Status - Applicants who do not meet the minimum GPA and/or test score required by their program's admission criteria may be allowed to pursue coursework as a provisionally admitted student. The purpose of the provisional status is to monitor and support the students' academic success. Provisional status requires meeting specific academic standards in coursework. Refer to the degree program for provisional requirements.

Conditional Status - Applicants who are unable to produce official copies of their transcripts, test scores, or other official documents at the time of their application may be admitted on conditional acceptance. The purpose of the conditional acceptance is to give the student additional time for the official documents to be received by the CGC office. Applicants must be able to produce unofficial copies of these documents for review prior to being accepted on conditional status. Documents must be legible and include important identifying information (applicant name and institution/testing agency name). If unofficial document is a transcript, it must also include a course-by-course listing with credit hours and grades earned, cumulative GPA, degree earned, and date degree conferred (unless pending in your final semester of coursework). Official copies are required at time of admission.

Undergraduate Students Taking Graduate and Online Courses
Academic seniors with a cumulative Grade Point Average of at least a 3.20 may take up to six hours of graduate courses through The Citadel Graduate College in each semester of their senior year when space is available. These courses may provide students a head start on earning a graduate certificate or a graduate degree, but graduate courses may not be used to meet undergraduate degree

requirements and will not be used to compute undergraduate GPA. Students must have the permission of the Associate Provost for Academic Affairs. Academic juniors or seniors may, in certain circumstances and with the approval of the Associate Provost for Academic Affairs, take one online, undergraduate course through The Citadel Graduate College per semester when space is available.

Admission Test

For any graduate programs that require submission of an official admissions test score, the test must be current within five years of the application. See the appropriate program for the type of test(s) required. All programs have the option of waiving test scores for students.

Applicants for some graduate programs in The Citadel Graduate College who possess a master's or doctorate degree from a regionally accredited institution may be eligible to waive the requirement to supply an admissions test score. The applicant must send the written waiver request and transcript from a regionally accredited institution, showing a conferred Master's or higher degree, directly to the Graduate College. If required by the program, The Graduate College will forward the request and transcripts to the academic program director who will communicate the acceptance or denial of the waiver in writing.

Advisement and the Planned Program

Upon acceptance into a degree program, a student is assigned an advisor in the area of academic concentration. It is the student's responsibility to confer with this advisor at an early date and at periodic intervals to assure appropriate course selection and awareness of degree requirements. Degree candidates in some programs must file an official program of study. This program of study will be developed in consultation with the student's advisor and approved by the appropriate Dean or Department Head. This program of study is filed in the Registrar's Office and will be used in the degree audit process. It is a joint responsibility of the advisor and student to maintain the program of study in a current state. Modifications in a program of study can be accomplished with the written approval of the appropriate Dean or Department Head. Students who wish to select a new major or degree program must file an application and fee, meet all admission requirements of the new major or degree program, and be accepted into the new major or degree program before registration in the new program should occur. Completion of coursework for a program in which a student has not been formally accepted does not imply admission into that program. A student should pursue no more than 8 credit hours of coursework for a program to which they have not been formally accepted.

Audit Policy

A student may elect to audit a course for no credit. Permission to audit must be obtained from the school/department offering the course and a form must be submitted. Students must possess an undergraduate degree from a regionally accredited college or university to audit a graduate level course. Students cannot switch from credit to audit status, or vice versa, after two class meetings. Auditors must apply and be accepted as a non-degree seeking

student and are permitted to register for a class on a “space available” basis. The audit fee is the same as the regular credit hour fee. Students must be registered in the class they wish to audit.

Course Load

Graduate students are considered full-time if they carry nine (9) credit hours accumulated over any combination of courses during a full semester. For students enrolled in one mini term per semester, 4.5 credit hours will be considered full-time for the mini term. The semester hour load for students wishing to be classified as part-time is 4.5 credit hours during a full semester. Students holding Citadel graduate assistantships will be considered as full time if they are taking at least six (6) semester hours. If a student is enrolled in Maymester and two summer sessions, a maximum of five courses (15 credit hours, but 17 credit hours including lab courses) may be taken. The maximum load allowed in Maymester is one course; the maximum load allowed in each summer session is two courses, regardless of how many terms are offered or whether the course is face-to-face or online.

Maymester and Summer School

The Citadel’s Maymester and Summer School is a component of the CGC which has the responsibility for the coordination and administration of all aspects of The Citadel’s graduate and undergraduate summer school programs.

All Maymester and Summer School students are ultimately the academic and administrative responsibility of the Provost. Students residing in the barracks, regardless of academic status are the disciplinary responsibility of the commandant, all other non- cadet students remain as stated above.

Undergraduate transient admission to Maymester and Summer School does not constitute admission to the regular academic session of The Citadel.

Transient Students

Undergraduate transient students seeking initial admission to Maymester and Summer School at The Citadel must complete an application and pay the application fee. High school or college transcripts are required for enrollment in Maymester or Summer School. Rising high school seniors may be admitted on the basis of written recommendations from their high school guidance counselor or principal and may enroll in a maximum of two freshman level courses.

Citadel undergraduate day students who are still active students and have already enrolled at The Citadel should contact the Registrar’s Office for registration information and assistance. Undergraduate day program students who are beginning in the upcoming fall semester and wish to take summer courses should contact CGC for application and registration assistance. When cadets enroll in summer courses or graduate courses, they are required to adhere to the rules and policies outlined in the honor code regarding behavior, class performance, and academic standards.

Undergraduate students seeking admission into evening undergraduate programs should refer to requirements outlined in

each academic section of this catalog. Graduate students enrolled in Maymester and Summer School must go through the admissions procedure outlined in the CGC catalog. Admission to the program and enrollment in courses are governed by the policies outlined for the program to which the student applies. Students enrolled in graduate courses are classified as “Graduate Students.”

Registration for all students, graduate and undergraduate, enrolled in Maymester or Summer School at The Citadel must be conducted online via Lesesne Gateway.

Course Substitution

Course substitutions in degree programs can only be authorized by the approval of the Head of the Department and Dean of the School. Forms to initiate this procedure are available in the Registrar’s Office or online.

English Fluency Policy

In accordance with the laws of South Carolina, The Citadel ensures the English fluency of its teaching faculty. Should a student challenge the English fluency of a member of the faculty, standard procedures for student academic grievances will be followed. If a review committee is called for, the native language of one of the faculty members will not be English.

Pass-Fail Courses

For certain courses, such as internships, practica, workshops, professional development courses, etc., a grade of pass or fail may be appropriate. Students taking courses of this nature need to discuss such arrangements with their advisor. Quality points will not be awarded for pass or fail work, and performance that is barely adequate (C+ or below) will not receive credit.

Readmission Policy

In exceptional and extraordinary circumstances, a graduate student can petition their academic school dean for reinstatement through a letter of appeal, but the granting of such appeals would be considered unusual and rare. The readmission policy for CGC undergraduate students requires a waiting period of **one semester**, not including summer sessions. A readmission application must be submitted through the Registrar’s Office and an interview by the Associate Provost of Academic Affairs is required.

Transfer Credit

The Citadel Graduate College does permit up to 12 hours of transfer credit from other accredited higher education institutions and from military education and training recommended for credit by the American Council on Education. No more than 12 hours may be transferred from other accredited colleges or universities (e.g. Southern Association of Colleges, North Central Association of Colleges and Schools, etc.). Exceptions may be granted by the Associate Provost of Enrollment Management. Only graduate credit hours in which grades of “B” or higher have been earned are transferable. Some programs allow fewer hours of transfer credit. Students should check the requirements for specific programs for the maximum number of credit hours that may be transferred into

his or her program at The Citadel.

To be transferred, credit hours must have been earned within six years of the date of admission to The Citadel. Students who desire to take a course at another institution for transfer while enrolled in CGC must obtain prior approval from their department head. Acceptance of transfer credits within the foregoing rules is the prerogative of the academic department or school.

Ordinarily, course work accepted for transfer must parallel course work available at The Citadel. However, where the head of the major department or Dean of the school feels that graduate course work not equivalent to courses at The Citadel will enhance the program, up to six semester hours of such credit may be acceptable. These will be part of the maximum allowable transfer hours for that program.

Expenses & Financial Aid

Fee Payment

The Citadel Treasurer's Office is responsible for the collection of monies due to The Citadel. All fees are due and payable at the time of registration. If fees are not paid by the date on the term calendar, the student may be dropped from registered classes. Checks should be made payable to The Citadel and mailed to 171 Moultrie Street, Charleston, SC 29409. Fees may also be paid online with Visa, Mastercard, Discover or American Express. Electronic check payments are available at no charge. Deferred payment plans may be arranged in advance of a semester through the Citadel Tuition Payment Plan. Forms are available on the Treasurer's webpage at www.citadel.edu/treasurer. The Citadel reserves the right to adjust fees at any time to meet the current cost of operation. Fee schedules are published each semester on The Citadel's web page. All correspondence concerning fees, payments, and status of accounts should be directed to the Treasurer's office.

Financial Aid and Scholarships

The Office of Financial Aid and Scholarships administers student loan applications, grants, scholarships, and work-study programs. The office is located in Bond Hall, Room 138, and staff can be reached at (843) 953-5187 or by email at financial_aid@citadel.edu.

Forms and Deadlines

To apply for financial aid at The Citadel, all students should file a Free Application for Federal Student Aid (FAFSA) online at fafsa.ed.gov as soon as possible after October 1 each year. Additional information may be requested by the Office of Financial Aid and Scholarships. Students are responsible for checking their Lesesne Gateway accounts, completing all requested paperwork, and meeting financial aid requirements in a timely manner. Funds are limited, so late applications are considered for aid only if resources are still available.

FAFSA Priority Deadline Dates	
Academic year (fall and spring)	October 31
Fall only	October 31
Spring only	October 1
Summer	April 1

Applicants who have not completed all financial aid paperwork by June 30 should not expect to receive notification of awards prior to the beginning of fall semester. These applicants should be prepared to pay for their tuition, fees, and other costs by established fee payment deadlines. Students are reimbursed if subsequently determined to be eligible for financial aid.

Determining Financial Need

The amount of financial aid is based on the FAFSA form the applicant files after October 1 each year. This form solicits information about the family's current financial situation and produces an "expected family contribution" (EFC). Adjusted gross income data from tax forms are used, along with current asset information to determine family resources. Allowances are made for federal and state taxes, social security, employment (when both parents work), unusual medical and dental expenses, and family size. Other factors considered include any unusual expenses and the number of family members in college. In its simplest definition, financial need is the difference between what a student will pay to attend college and the expected family contribution, as determined by the need analysis. If costs exceed the amount of family contribution, then the applicant has "demonstrated" financial need.

Dependent or Independent Status

Federal student aid programs are based on the premise that parents have the primary responsibility of financing their children's education. However, independent students are not required to submit parental data. Students who fall into at least one of the following categories are considered independent:

- He/she is at least 24 years old by Dec 31 of the academic year.
- He/she is a graduate student.
- He/she is married.
- He/she is currently serving on active duty in the U.S. Armed Forces for purposes other than training.
- He/she is a veteran of the U.S. Armed Forces.
- He/she has children (or other dependents) and will provide more than half of their support.
- He/she was in foster care or deemed a dependent or ward of the court.
- He/she was an emancipated minor or in legal guardianship as determined by a court.
- He/she is determined to be an unaccompanied youth who is homeless or self-supporting and at risk of being homeless.

Federal Eligibility Requirements

Any student who is accepted for admission is eligible to request financial assistance. However, there are several general eligibility requirements a student must meet to receive federal financial aid:

1. A student must be admitted to The Citadel as a regular or provisional student.
2. A student must be a U.S. citizen, or a national or permanent resident.
3. A student may not receive aid if he or she is in default at any institution on any Federal Student Loan Program.
4. Students must be enrolled at least half-time. This is defined as 4.5 hours/semester for graduate students and six (6) hours/semester for undergraduate students. The only exception to this rule will be internships and practicums, which, given their somewhat unique composition and requirements, qualify a student for half-time status. This definition of half-time status is important to be eligible for financial aid and to qualify for in-school deferment on prior federal student loans.
5. A student may not receive aid if he or she owes a repayment at any institution on a Pell Grant, Supplemental Grant, or State Student Incentive Grant.

6. A student must have the minimum grade point ratio and must make satisfactory academic progress (SAP) toward a degree to continue to receive federal financial aid.
7. A graduate certificate student is not eligible for federal financial aid.

Types of Financial Aid

Please visit <http://www.citadel.edu/finaid> for detailed information about the various financial aid programs offered.

Satisfactory Academic Progress (SAP) for Financial Aid Recipients

In compliance with regulations governing federal and/or state financial aid programs, The Citadel is required to monitor each student to be certain that he or she is maintaining Satisfactory Academic Progress (SAP) in his or her course of study. SAP standards are separate from The Citadel's academic policies and are reviewed annually at the end of each spring semester.

How the Policy Works

Students who fail to meet published SAP standards will be ineligible to receive federal or state financial aid funds. However, those students failing to meet the minimum standards, as prescribed in this policy, may appeal their status by following outlined conditions.

Academic Year

The academic year for SAP determination is comprised of the fall, spring, and summer terms.

Minimum Standards

Unsatisfactory academic progress is defined as a failure to meet at least one of the following standards:

Undergraduate Students

1. Academic Progression
 - a. Full-time students (enrolled in at least 12 hours/semester) must earn 24 credits hours in an academic year. Full-time students enrolled in one semester are considered to be meeting progression standards by earning at least 12 hours.
 - b. Part-time students (enrolled in less than 12 hours/semester) must earn at least 66% of credit hours attempted in an academic year.
2. GPA – A student's GPA must meet the required minimum for their grade level according to The Citadel's academic policies for continuance.
 - a. 1.3 with < 39 attempted hours
 - b. 1.5 with 40 – 69 attempted hours
 - c. 1.7 with 70 – 99 attempted hours
 - d. 2.0 with > 99 attempted hours
3. Attempted credit hours cannot exceed 207 hours (more than 150% of program length).

Graduate Students

1. Academic Progression
 - a. Full-time students (enrolled in at least 9 hours/semester) must earn 18 credit hours in an academic year. Full-time students enrolled in one semester are considered to be meeting progression standards by earning at least 9 hours.

- b. Part-time students (enrolled in 4.5 hours/semester) must earn at least 66% of credit hours attempted in an academic year.
2. GPA – A student must earn at least a 3.0 grade point average.
3. Attempted credit hours cannot exceed 150% of the student's program length.

SAP Appeal

Students who have not met SAP have the opportunity to complete an appeal to regain eligibility for federal aid. Completion of this process does not guarantee reinstatement of federal financial aid. Students are responsible for full payment of tuition/fees regardless of financial aid status. It is also the student's responsibility to be aware of and to meet all fee payment and financial aid deadlines.

The SAP Appeal form is available on the Office of Financial Aid & Scholarship's webpage on The Citadel website at citadel.edu.

The SAP Appeal must include:

1. A completed SAP Appeal Form and Academic Improvement Plan approved by the Academic Support Center and signed by both the advisor and the student, and
2. A letter written by the student that defines why the student failed to make SAP and what has changed that enables the student to meet SAP at the next evaluation.

If a student fails to either regain regular SAP eligibility after one semester or meet the conditions of the Academic Improvement Plan, the student is ineligible to receive federal financial aid (Title IV aid).

Appeal Deadlines

Completed appeal forms must be turned in two weeks before the end of the term for which the appeal is filed.

Grades

Only letter grades are given to evaluate a student's progress. The following definitions of letter grades are applicable:

- "A" Superior
- "B" Very Good
- "C" Satisfactory; Acceptable
- "D" Marginal; Passing
- "F" Unsatisfactory
- "P" Grade assigned in pass/fail courses that do not carry credit hours to designate passing performance
- "S" Grade assigned in pass/fail courses that carry credit hours to designate that a grade of "A", "B" or "C" has been earned and credit has been awarded
- "U" Grade assigned in pass/fail courses and in ENGL 101 to designate that a grade of "D" or "F" has been earned and no credit has been awarded
- "W" Withdrawal from a course prior to the official deadline
- "I" An Incomplete is awarded when course requirements have been very nearly met but for authorized reasons (illness, injury, family emergency, etc.) cannot be completed during the current semester.
- "IP" Grade assigned for courses in which requirements are not expected to be met in one academic term. The grade of "IP" must be removed after two full semesters, or the "IP" becomes an "F". The summer session will not be considered a semester in this case. Under extenuating circumstances, an extension may be awarded by the Associate Provost for Academic Affairs with the recommendation of the instructor. The removal of the "IP" is the responsibility of the student. Students may not enroll in a course in

which they currently have an "IP"

Students who are enrolled in audit courses will not receive financial aid for these courses.

Students can access midterm progress and semester grade reports online by using BANNER Self-Service through the Lesesne Gateway portal.

Taking or Repeating Courses to Improve the GPA/Grade Replacement

The regulatory definition for full-time enrollment status (for undergraduates) has been revised to allow a student to retake (one time only per previously passed course) any previously passed course. For this purpose, passed means any grade higher than an "F," regardless of any school or program policy requiring a higher qualitative grade or measure to have been considered to have passed the course. This retaken class may be counted towards a student's enrollment status, and the student may be awarded Title IV aid for the enrollment status based on inclusion of the class. A student may be repeatedly paid for repeatedly failing the same course (normal SAP policy still applies to such cases), and if a student withdraws before completing the course that he or she is being paid Title IV funds for retaking, then that is not counted as his or her one allowed retake for that course. However, if a student passed a class once, then is repaid for retaking it, and fails the second time, that failure counts as their paid retake, and the student may not be paid for retaking the class a third time.

Transfer Credits

When evaluating SAP, a student's transfer credits, accepted by The Citadel toward completion of the student's degree program, will count as both credit hours attempted and hours earned.

Change of Major

Students that have changed majors and earn more than the maximum allowable number of credit hours toward graduation will be required to submit an SAP Appeal.

Second Degrees

Students that are completing a second degree will be required to submit an SAP Appeal to explain the reason behind earning more than 150% of allowable credit hours.

Financial Aid Funds Covered By SAP Standards

- Federal Pell Grant
- Federal Supplemental Educational Opportunity Grant (SEOG)
- Federal Work Study
- Federal Direct Loan, subsidized and unsubsidized
- Federal Direct PLUS Loan
- Federal Direct Graduate PLUS Loan
- South Carolina Teachers Loan
- South Carolina Career Changers Loan
- South Carolina Palmetto Fellows Scholarship
- South Carolina LIFE Scholarship
- South Carolina Need-Based Grant
- Other federal/state programs as required
- Some Private Educational Loans (as required by the lender)

Financial Aid Refund and Repayment Policy

Refunds

Refunds will be returned to the programs from which the student received aid. The Higher Education Act of 1998, Public Law 105-244, substantially changed the way funds paid toward a student's education are managed should the student, as a recipient of federal financial aid, withdraw from school. If a student who was awarded financial aid withdraws from school, he/she is eligible for the "institutionally-determined refund" that remains after the immediate repayments of the financial aid award to the Office of Financial Aid & Scholarships. This policy also applies to students on whose behalf a parent has borrowed a Title IV loan. Refunds are returned to the programs that awarded the student aid. In the case of federal financial aid, a statutory schedule is used to determine the amount of federal financial aid that has been earned based on the period the student was in attendance. Up through the 60% point, in each payment period of enrollment, a pro rata schedule is used to determine how much federal financial aid the student will receive. After the 60% point, in the payment period of enrollment, a student has earned 100% of the federal funds awarded for the period.

The percentage earned will be calculated based on the following schedule:	
Week 1	6 percent
Week 2	12 percent
Week 3	18 percent
Week 4	25 percent
Week 5	31 percent
Week 6	37 percent
Week 7	43 percent
Week 8	50 percent
Week 9	56 percent
Week 10	60 percent
Week 11-16	100 percent

For example, if a student has received \$1,000 in Federal Financial Aid and withdraws within the first week of classes, that student will receive 6 percent (\$60) of the aid award applied to total charges. The remaining \$940 will be returned to the Federal Financial Aid programs in the following order:

1. Unsubsidized Student Loans
2. Subsidized Student Loans
3. Perkins Loans
4. PLUS Loans/Graduate PLUS Loans
5. Federal Grants
6. Other Assistance under Title IV

The refund and repayment provisions mandated by the federal government for federal aid recipients apply when a student receives financial aid funds and withdraws, drops out, takes an unapproved leave of absence, fails to return from an approved leave of absence, is expelled, or otherwise fails to complete the period of enrollment for which he or she was charged. The refund and repayment requirements DO NOT APPLY to a student who:

- Withdraws, drops out, or is expelled before his or her first day of class, or
- Withdraws from some classes, but continues to be enrolled in

- other classes, or
- Does not receive funds for the period in question. (Students whose parents received a PLUS Loan are considered to have received funds and so are covered for the refund and repayment requirements.)

Repayments

If a student's non-instructional educational expenses (allowances as prescribed below) incurred up to the time of withdrawal exceed the amount of cash disbursement, the student does not owe a repayment. If cash disbursed exceeds the non-instructional costs of education incurred up to the time of withdrawal, the student does owe a repayment. This repayment is the difference between costs incurred and the actual cash refund received. Non-instructional expenses are determined by calculating the percentage of room, board, books, supplies, travel, and personal expenses incurred during the portion of the term a student is enrolled. Off-campus board and personal expenses are prorated on a weekly basis. There is no proration of on-campus room charges. A percentage of books, supplies, and travel costs is allowed based on length of enrollment.

Student Aid Accounts to be Refunded and Repaid

Once the amounts to be refunded and/or repaid are determined, the aid programs from which the student received funds will be reimbursed in the following order:

1. Federal Direct/Stafford loans
2. Federal Perkins loans
3. Federal PLUS loans received on behalf of the student
4. Federal Pell Grants
5. Federal SEOG Grants
6. Other Title IV programs
7. Other federal, state, private, or institutional student financial assistance received by the student for which refunds are required
8. The student

Other Assistance

Vocational Rehabilitation Scholarships: This program provides for education and training if the student has a physical or mental disability that is a substantial handicap to employment and if there exists reasonable expectation that vocational rehabilitation services may lead to gainful employment. Additional information is available through the Department of Vocational Rehabilitation in the student's home state.

College Budget Plans: The Citadel Tuition Payment Plan (CTPP) allows families to finance the cost of Tuition, Auxiliary Fees (Housing/Room/Board) and OneCard. The plan is offered as a service to the student, allowing the student to finance education and related costs over the period of a semester. To calculate the amount to include in the plan, students should subtract financial aid and any scholarships from their balance- and only place their uncovered expenses in the payment plan. There is a \$50 enrollment fee per term. The plan is for 5 equal payments. Enrollment deadlines can be found on the Treasurer's web page at www.citadel.edu/treasurer.

Veterans Services: Services are administered under the umbrella of student financial aid at The Citadel. Veteran services are intended to meet the needs of students receiving benefits under the following programs:

- Ch. 30—Montgomery GI Bill—Active Duty, Veterans

- Ch. 31—Vocational Rehabilitation
- Ch. 33—Post 9-11 GI Bill
- Ch. 35—Dependents’ Educational Assistance Program
- Ch. 1606—Montgomery GI Bill—Selected Reserve

Due to the complexity of VA educational benefits, students are encouraged to contact The Citadel’s Veterans Services Office well in advance of the beginning of the semester. Students who have already applied for benefits should submit a copy of their Department of Veterans Affairs Certificate Eligibility. In compliance with federal regulations, students are required to follow guidelines set by the Department of Veterans Affairs. VA Certification Policies and Procedures can be found on The Citadel’s website under Veterans Services. Staff can be reached at 843-953-9824 or email at va_benefits@citadel.edu.

Refunds

No fees are refunded after the published drop deadline. This date is usually following two class meetings and is published in the term calendar at <http://www.my.citadel.edu/root/registrar-important-dates>. To obtain the appropriate refund, a student must drop the course via Lesesne Gateway. The Citadel Graduate College may authorize a refund for extenuating circumstances after the scheduled refund date if a formal appeal is made in writing. Extenuating circumstances are defined as a death in immediate family, serious medical issues, or military deployment. Registration, technology, infrastructure, and application fees are not refundable.

Academic Regulations and Procedures

Application for Resident Status for Tuition and Fee Purposes

Any student or prospective student who is uncertain about payment of in-state tuition and fees has the responsibility of securing a ruling from The Citadel by providing all relevant information on special application forms. These forms can be obtained from the Office of the Registrar, Bond Hall, Room 173, or online at <http://www.citadel.edu/registrar/forms/>. Completed forms must be returned to that office at least four to six weeks prior to registration for any semester or summer term for which the student is attempting to qualify for in-state tuition and fee rate.

Requirements for Graduation

In addition to the program requirements, the following requirements must be met for graduation.

The Citadel Principled Leadership Seminar

The Citadel Principled Leadership Seminar is an online professional development seminar in which graduate students at The Citadel learn about principled leadership and the institution’s core values – honor, duty, and respect. Participants focus on what it means to be a member of The Citadel community, and the application of core values as a guiding feature of one’s place in life and in leadership within an organization.

Beginning Fall 2013, all degree-seeking students entering The Citadel Graduate College are required to register for and complete The Citadel Principled Leadership Seminar. Beginning in Fall 2017, all graduate degree-seeking and certificate students entering The Citadel Graduate College are required to register for and complete The Citadel Principled Leadership Seminar. The seminar is taught by The Citadel’s Department of Leadership Studies. Students must register for the seminar via Lesesne Gateway and complete the course during their first semester of enrollment.

Darkness to Light Training

The Citadel is the first college in the country to enter into an agreement with the Darkness to Light Foundation for campus- wide training for all faculty, staff, and students on child sexual abuse. This “Stewards of Children” training program assists the college in creating policies and programs to protect children and provides faculty, staff, and students with insight into how to recognize potential problems and the appropriate ways to respond should a concern be raised about a child. The Citadel’s goal is 100% compliance, meaning all faculty, staff, and students will be required to either participate in the training or demonstrate proof that they received it elsewhere.

Beginning in Fall 2014, all non-cadet students (day veteran, active duty, graduate students including those enrolled in graduate certificates and all evening undergraduate students) who enroll in Citadel course(s) are required to successfully complete D2L

training in their first semester on campus. Students who have completed D2L training in the last five years need only provide a copy of their certificate of completion by uploading it through the Principled Leadership Seminar course – LDRS 500.

An online version of the course is available for all CGC students. Please contact the CGC office for more information. Students who do not complete the training will not be allowed to register for the next semester until proof of completion is presented to the CGC office.

Dress Code Policy for Veteran Students and Fifth-Year Students

All veteran students and fifth year cadets are expected to be cleanly and neatly dressed. This is particularly important as they serve as role models for other students on campus. Proper dress is business casual clothing (e.g., khaki pants or denim jeans and a collared shirt/polo shirt for males and slacks/skirt and blouse for females). Jeans that are frayed, patched, or contain holes are unacceptable. Additionally, shoes must be worn at all times. Specific types of clothing (e.g., frayed or torn jeans, jean shorts, running shorts, PT shorts, cut-off shorts, warm-up clothes, bathing suits, beach cover-ups, tank tops, halter tops, tube tops, flip flop shoes, etc.) are not proper attire for the classroom, library, or other academic areas. During the summer sessions, Faculty and staff follow a more relaxed dress code, and a similar approach to the dress code will apply to students.

Additional Dress Code requirements apply primarily to cadets with Day Student Status:

1. Regulations pertaining to body piercing and tattoos are the same as those for members of the Corps of Cadets.
2. A broken uniform is unattractive anywhere, but it is especially unsuited for a military college campus or classroom. Portions of cadet uniforms are not, therefore, to be worn by non-cadets or cadets with Day Student Status.
3. Students' hair (males and females) will be neatly trimmed and styled, as will mustaches and sideburns, if applicable.
4. Students will wear business attire when members of the Corps of Cadets are required to appear in full dress or white uniforms.

For students who violate these dress code rules, and who are not in compliance with minimal standards for personal appearance, the following protocols will apply:

1. For a first offense, a student will be required, upon direction of a campus authority, to leave campus until such discrepancies are corrected.
2. For a second offense, a student who fails to adhere to the dress code policy will be required to meet with the Associate Provost of Enrollment Management shortly after the violation occurs. In this meeting, the student will be educated on the policy and asked to sign a formal, written agreement of future compliance with the dress code. The Associate Provost has the option of applying additional sanctions should it be deemed necessary to gain compliance.
3. Additional violations of the dress code will result in progressively punitive measures and will include a formal statement of compliance by the student agreeing to adhere to the dress code policy.

The Citadel Non-Cadet Honor Code

Honor Code Statement: It is the responsibility of all community members to promote, abide by, and enforce the following honor code: "A Citadel non-cadet student (e.g. graduate, evening undergraduate, or veteran) does not lie, cheat, steal, nor tolerate those who do."

It is the responsibility of all Citadel community members to promote, abide by, and enforce the following honor code. Every non-cadet student (which includes evening undergraduates, graduate students, day veterans, fifth-year students, and all active duty students) must uphold the honor code as well as The Citadel's Core Values of Honor, Duty, and Respect. Each student is required to represent him or herself honestly in all college business matters and on all documents. Each student does his or her own work and refrains from any form of academic dishonesty, including plagiarism and cheating. In personal conduct, each student acts in a professional and ethical manner and refrains from any form of disrespectful behavior to any other member of The Citadel community.

In addition to students enrolled in degree programs and certificates, or as part of a joint program with other institutions, this honor code is also applicable to transient students and cadets who enroll in courses during the summer.

This honor code will go into effect for all new students beginning Fall 2015. An awareness campaign will commence in Spring 2015 and information about the non-cadet honor code will be posted on the Graduate College website and the website for the Office of Military and Veterans Affairs, as well as included as part of the orientation packets for new students. Cadets will be made aware of the honor code as it relates to summer terms through communication with the Office of Academic Affairs and the Commandant's Office.

Definition of Terms:

In general, four types of conduct fall under the honor code: lying, cheating, stealing, and the toleration of those who engage in any of these activities.

1) **Lying.** Defined as any attempt to deceive, falsify, or misrepresent the truth in any matter involving college business. This includes but is not limited to matters involving academic standing, participation in courses, financial information, or any false statements to faculty, staff, administrators, or university officials.

2) **Cheating.** Defined as taking or attempting to take, or otherwise procure intellectual property in an unauthorized manner; selling, giving, lending, or furnishing to any unauthorized person by a student enrolled in that course, material which can be shown to contain the questions or answers to any exam from any course offered at The Citadel. Academic Dishonesty also includes plagiarism, including fabricating, forging, or falsifying laboratory results or reports, or using work from other courses or from previous assignments for a current class.

The term cheating includes, but is not limited to: 1) the use of sources beyond those authorized by the instructor for written assignments; 2) the use of any unauthorized assistance in taking exams or quizzes; 3) the unauthorized acquisition of tests or other

academic material belonging to a faculty or staff member or a student.

The term plagiarism includes, but is not limited to, the use of published or unpublished work of another person without full and clear acknowledgement. It also includes the unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic material.

3) **Stealing.** Defined as taking without authority, personal, government, or college property.

4) **Toleration.** Defined as the failure to report a case of lying, cheating, or stealing as defined above to the proper Honor Council authorities.

Honor Council Composition:

Faculty: Six members; one from each Academic School and one from the Library. Honor Council members are appointed by Graduate Council and serve three-year terms.

Students: Two members appointed by The Citadel Student Government Association.

Chair: A faculty member elected by members of the Council. Calls meetings, ensures procedures are followed, and is non-voting but casts the deciding vote in the event of a tie.

Training of Honor Council Members: All members are required to participate in a workshop/training seminar on Citadel Honor Code and procedures. Note: this training should be similar in nature to what cadet honor court members receive on procedures and content.

Procedures:

Any student, faculty member, or administrator may charge a student with an honor code violation. All accused students participating in Honor Council hearings are guaranteed the following rights during a hearing:

1. The right to a representative. In all college hearings and boards in which a student faces suspension, dismissal or expulsion, the student may be represented by up to two student representatives. Representatives must be students in the same academic program as the student facing disciplinary action, i.e., graduate students or evening undergraduate students may not serve as representatives for cadets, nor may cadets serve as representatives for graduate or evening undergraduate students. Representatives may participate in the board or hearing, including speaking directly to the board or hearing officer and questioning witnesses.
2. The right to question all witnesses. In cases where the complainant is an alleged victim, accommodations may be made.
3. The right to present evidence and call witnesses.
4. The right to decline making any statements or answering questions. In doing so, the Council may draw inferences, either positively or negatively, from such a refusal.
5. The right to an audio copy of the hearing upon written request.
6. The right to appeal the decision of the Honor Council.

Honor Council Hearing Procedural Guidelines:

All student conduct hearings shall be conducted according to the following guidelines except as provided below:

1. Hearings will be conducted in private.
2. The complainant, accused student, and their representatives, if any, shall be allowed to attend the entire portion of the hearing at which information is received (excluding deliberations). Admission of any other person to the hearing shall be at the discretion of the Honor Council Chair.
3. In hearings involving more than one accused student, the Honor Council Chair, at his or her discretion, may permit the hearings concerning each student to be conducted either separately or jointly.
4. The complainant and the accused student have the right to be assisted by a representative of his or her choosing. Representatives must be students in the same academic program as the student facing disciplinary action, i.e., graduate students or evening undergraduate students may not serve as representatives for cadets, nor may cadets serve as representatives for graduate or evening undergraduate students. Representatives may participate in the board or hearing, including speaking directly to the board or hearing officer and questioning witnesses.
5. The complainant and the accused student may arrange for witnesses to present pertinent information to the hearing. Witnesses will provide information to and answer questions from the Honor Council.
6. Pertinent records, exhibits, and written statements may be accepted as information for consideration during the hearing at the discretion of the Honor Council Chair.
7. All procedural questions are subject to the final decision of the Honor Council Chair.
8. After the portion of the hearing concludes in which all pertinent information has been received, the Honor Council shall determine whether the accused student is in violation of the Non-Cadet Honor Code.
9. The determination shall be made on the basis of a preponderance of the evidence--whether it is more likely than not that the accused student violated the Honor Code. Formal rules or process, procedure, and/or technical rules of evidence, such as those applied in criminal or civil court, are not used in these proceedings.
10. There shall be a single audio recording of all student conduct hearings (not including deliberations). Deliberations should not be recorded. The record shall be the property of The Citadel. If an accused student, with notice, does not appear for a hearing, the information in support of the charges shall be presented and considered even if the accused student is not present.

Hearing Protocol:

- I. Introductions of the participants in the hearing
- II. Chair or Administrator reviews hearing process and procedures
- III. Chair or Administrator confirms charges and statements of responsibility
- IV. Complainant/university calls witnesses
 - A. Complainant asks questions of witnesses
 - B. Board/Administrator asks questions of witnesses
 - C. Accused student asks questions of witnesses
 - D. All parties have opportunity to ask any additional questions
- V. Accused student calls witnesses
 - A. Accused student asks questions of witnesses
 - B. Board/Administrator asks questions of witnesses
 - C. Complainant asks questions of witnesses
- VI. All parties have opportunity to ask any additional questions to

accused student and/or complainant

- VII. Deliberations by Board - Student will be notified of the decision in writing via university e-mail, with a hardcopy sent by registered mail, within three business days.

Range of Sanctions:

Note: This list is not exhaustive and may be modified to meet particular circumstances in any given case. All sanctions become a part of student's official record. Final appeals of Honor Council rulings are made to the President. The procedure for appeals is found in the campus policies and procedures manual.

1. Expulsion—Permanent forced withdrawal from The Citadel. Although this may be imposed as a first offense for serious cases, it is usually imposed after other disciplinary methods have not achieved desired results. In all cases in which expulsion is appropriate, the Associate Provost of Enrollment Management will submit documentation and findings to the President of the college for final disposition. The President may elect, at his discretion, to impose another penalty. The student will be notified of the President's decision, and that decision is final. A student's suspension or expulsion will be noted on his or her transcripts.
2. Dismissal—Forced withdrawal from The Citadel for two semesters.
3. Suspension—Forced withdrawal from The Citadel for one semester. In instances of both dismissal and suspension, students may not visit campus or participate in any campus-related activities. An exception to this rule is if the student is seeking clarification of his or her academic record and a physical visit to campus is required.
4. Reprimand—Written notice to student that behavior was unacceptable and that further issues could result in suspension or expulsion.
5. Restriction—Loss of privileges including but not limited to parking on campus, access to university facilities, etc.
6. Course Withdrawal—From the course in which the offense occurred.
7. Grade Change—Only for cases involving academic integrity. Such a sanction must be approved by the Provost or the Associate Provost of Enrollment Management.
8. Restitution—Reimbursement for physical damages or loss of property.

Appeals:

Grounds. An appeal does not provide a second forum in which to present the case. Appeals deal only with how a decision has been reached and not with the decision itself. The following are the exclusive grounds for all disciplinary and academic appeals:

1. That the hearing officer or board failed to provide due process;
2. That significant information has been discovered since the board or hearing, which would probably change the result, but which could not, in the exercise of due diligence, have been presented to the board or hearing.

A review by the President is not considered an entitlement but is within the scope of authority of the President. This is the final appeal at the institution and if applicable, all imposed sanctions are implemented after the President issues his decision.

Academic Standards

All students are expected to maintain high academic standards. In addition to the grade point average requirements for satisfying degree standards, the following policies set minimum guidelines for all graduate programs. Specific programs may establish more rigorous criteria for satisfactory progress. Students should carefully study the sections of this catalog pertinent to their degree program for statements about expectations, which may exceed these minimal criteria.

Any grade of "C" (ie. "C", "C+") is a warning that the individual is not performing at the level expected of graduate students; a grade of "F" is a clear statement of inadequate performance. Either a "C" or "F" grade calls into question the expectation of reasonable progress toward the degree. In order to maintain appropriate academic quality, the following policy applies to students enrolled at The Citadel:

1. If a student receives a grade of "F" in a graduate course, regardless of his or her status, the student will be terminated from the program. The student may appeal in writing to his or her Dean for reinstatement. If the student is granted reinstatement status before the end of the drop/add period for the next academic term, he or she may register for that term.
2. If a student receives seven (7) or more credit hours of graduate course work with a grade of "C" or "C+" regardless of his or her status, the student will be terminated from the program. The student may appeal in writing to his or her Dean for reinstatement in the program. If a student is granted reinstatement status before the end of the drop/add period for the next academic term, he or she may register for that term.
3. Any student admitted to a graduate program who has earned or attempted twelve (12) hours of graduate credit must have a cumulative GPR of 3.0 or higher to continue in the program. If a student's GPR falls below a 3.0 any time after the completion of twelve (12) hours of graduate credit, the student must improve his/her GPR to a minimum 3.0 by the time he/she has completed nine (9) additional graduate credit hours. If the student achieves a minimum 3.0 while completing these nine (9) additional graduate credit hours, the standard of maintaining a 3.0 GPR begins again.

Some programs have stricter program requirements. Check with your program advisor for the standards for your program. Students who have been terminated from their program may appeal in writing to his or her Dean for reinstatement. If the student is granted reinstatement status before the end of the drop/add period for the next academic term, he or she may register for that term. Generally, a student can expect to receive a decision on an appeal within 2 weeks or 10 working days. Students are encouraged to provide a courtesy copy of grievances and appeals to the CGC for record.

Catalog of Record

The catalog bearing the number of the academic year in which the student enters The Citadel will be his or her catalog of record for academic program requirements.

Class Attendance

Regular attendance is required of all CGC students, and the attendance record maintained by the instructor is official. In case of absences due to illness or other circumstances beyond their control, students should notify the instructor as soon as possible. A student who misses more than 20% of the scheduled class meetings may be awarded a grade of “F” for excessive absences.

Online Course Attendance Policy

Distance education (online) students are subject to The Citadel’s attendance policy. Attendance in a distance education (online) course is defined by activate participation. Logging into CitLearn does not qualify as sufficient evidence of attending, as per federal financial aid guidelines, and nonattendance may affect financial aid and/or veteran’s benefits. Completion of tests, submission/completion of assignments, and participation in discussion forums are activities used to document enrollment. Students who have not documented enrollment and participation by the withdrawal period will be administratively dropped from the roll as “never attended.”

Comprehensive Examinations

The Citadel graduate programs vary in their exit requirements. While all degree programs require at least a 3.0 cumulative GPR (3.25 for Ed.S.) for graduation, some have an exit examination or exit project requirement. It is the student’s responsibility to be aware of these standards.

Confidentiality of Student Records

The Citadel maintains and discloses information from student records in accordance with the provisions of the “Family Educational Rights and Privacy Act of 1974” (FERPA), as amended. This law requires that educational institutions maintain the confidentiality of student educational records. The Citadel accords its students all rights under the law. FERPA coverage applies to all educational records that contain a student’s name, social security number, or other personally identifiable information, in whatever medium, to include electronic form. No one outside of The Citadel shall have access to nor will the institution disclose any information from a student’s educational records without the written consent of the student except in compliance with the provisions of Federal and State law.

Educational records may be disclosed to personnel within the institution who have a legitimate educational interest, to parents of students who are dependents as defined by IRS standards, to persons or organizations providing students financial aid, to accrediting agencies carrying out their accreditation function, to persons in compliance with a judicial order, or in an emergency, to persons in order to protect the health or safety of the student or others.

Within The Citadel community, only those members, individually or collectively, acting in the student’s educational interests are allowed access to student educational records. These members include the Board of Visitors, Faculty, and personnel in the Offices of the President, Provost and Dean of the College, Associate

Provost of Academic Affairs, Associate Provost of Enrollment Management, Registrar, and Vice President for Finance and Business Affairs. Directory information about a student may be disclosed at the discretion of The Citadel without the consent of the student unless the student has notified the Registrar within two weeks of the beginning of the academic year (fall semester) that the student refuses to allow the disclosure of such information. Any student desiring to keep directory information confidential must give notice at the beginning of each academic year and the notice is valid only for that year.

Course Cancellation

It occasionally becomes necessary to cancel a course. The Citadel reserves the right to cancel any course for which there is insufficient enrollment. This cancellation may be done without notice. Students affected by a course cancellation will receive due consideration and notification by the department offering the course. If no other satisfactory arrangements can be made, the student will receive a complete refund of all fees paid.

Degree and Certification Requirements

Specific requirements are detailed in the appropriate sections of the catalog. The general requirements include completing all specific program requirements and coursework while maintaining at least a “B” (3.0) GPA. Students should check the specific requirements of the program in which they are enrolled. State certification requirements are determined by external agencies over which The Citadel has no control. It is the student’s responsibility to meet these requirements, which are subject to legislative change. Advisors will assist students in staying current with these requirements and adjusting programs of study to reflect any change.

Earning a Second Master’s Degree

The College permits a student to earn a second Citadel master’s degree in a different program as long as no more than twelve credit hours in common course requirements are applied to the second master’s degree.

General Conduct Policy for Students

Responsibility for professional conduct rests with students as adult individuals and as members of The Citadel community. CGC students are expected to conduct themselves as responsible adults. All members of the campus community are expected to use reasonable judgement in all aspects of campus life and activity and to show due concern for the welfare and rights of others. Students are expected to adhere to all federal, state, and local laws.

The Citadel protects freedom of action and speech, so long as the exercise of this freedom is not of an inflammatory or demeaning nature and does not interfere with the operation of the College. The Citadel’s Conduct Policy prohibits the possession of drugs, destruction of property, making false statements of emergency situations, physical or verbal abuse, or harassment of any sort.

Students who violate the rules and regulations of The Citadel are subject to expulsion or lesser sanctions. These rules and regulations are published in “Regulations for Non-Cadet Students for Fall and

Spring Semester And All Students, Including Cadets, for Maymester or Summer School,” which can be found online at: <http://www.citadel.edu/root/images/BOV/Policies/03-provost/3-107-regulations-for-non-cadets.pdf>.

The Provost or his designee is responsible for administering the disciplinary conduct code for CGC students unless they reside in the barracks during Maymester and Summer School, in which case the commandant is responsible for discipline.

Grades

Only letter grades are given to evaluate a student’s progress. No numerical symbol or percentage is fixed or assigned to the equivalent of any grade.

- A: A grade of “A” represents work of a high quality. Four quality points are awarded for each credit hour.
- B+: A grade of “B+” represents above average quality work. Three and one-half quality points are awarded for each credit hour.
- B: A grade of “B” indicates average graduate work. Three quality points are awarded for each credit hour.
- C+: A grade of “C+” indicates below average graduate work and is an unsatisfactory grade. Two and one-half quality points are awarded for each credit hour.
- C: A grade of “C” is unsatisfactory. Two quality points are awarded for each credit hour.
- P: A grade of “P” indicates work of acceptable, graduate- level quality. While it signifies work of “A” or “B” level, it carries no quality points and is awarded only for designated courses such as workshops, internships, etc.
- F: A grade of “F” indicates that the minimum requirements have not been met. No quality points are awarded.
- I: A grade of “I” represents work of satisfactory quality incomplete for authorized reasons. (See section below.)
- W: A grade of “W” represents withdrawal from a course prior to the scheduled withdrawal deadline. No quality points are associated with the “W”, and there is no academic penalty for the student.
- IP: A grade of “IP” assigned for courses in which requirements are not expected to be met in one academic term. The grade of “IP” must be removed after two full semesters, or the “IP” becomes an “F.” The summer session will not be considered a semester in this case. Under extenuating circumstances, an extension may be awarded by the Associate Provost for Academic Affairs with the recommendation of the instructor. The removal of the “IP” is the responsibility of the student. Students may not enroll in a course in which they currently have an “IP.”

Grade of “I”

Incomplete “I” grades must be made up during the term following the recording of the grade. A grade of “I” received in the fall term must be made up by the end of the following spring term. A grade of “I” received in either the spring or summer term must be made up by the end of the following fall term. An extension of time not to exceed one additional term may be authorized for extenuating circumstances by the appropriate dean. Grades not made up within the authorized time limit will convert to a grade of “F,” and such courses will be included in calculating the GPR.

Cumulative Grade-Point Ratio

In addition to completing all specific program requirements, in order to remain in good academic standing, The Citadel Graduate College requires students to maintain a 3.0 GPA. Failure to maintain this GPA results in dismissal from that program. Should a student be enrolled in multiple programs or certificates, a cumulative GPA is not sufficiently accurate in determining a student’s academic standing. In such cases, the standard used to determine their eligibility is the student’s GPA in that particular program, not their cumulative GPA.

Graduation

The Citadel Graduate College is committed to making the graduation/ commencement experience a special one for its students. The following policy outlines the procedures for applying to graduate and participation in the annual CGC commencement ceremony. It is each student’s responsibility to apply to graduate. There are three graduation dates each calendar year. There is a May graduation date at the end of the Spring period of instruction, an August graduation date at the end of the Summer period of instruction, and a December graduation date at the end of the Fall semester period of instruction. There is one commencement ceremony each calendar year, in May, following the Spring semester.

Graduation

1. Applications for graduation are available on Lesesne Gateway, via the Student Tab. Failure to apply by the deadline incurs a late fee, may delay receipt of the diploma, and may prevent the student from participating in the commencement ceremony.
2. The graduation date is the term in which the student completes all requirements. An incomplete grade is a delay in the completion of a requirement, and the posting of the final grade determines the completion of that requirement.
3. Do not select a graduation date until you plan to meet all requirements by that date as applications are processed and diplomas are ordered based on your graduation application. If the graduation date submitted is not met, a new application will be required along with applicable fee, and the diploma will need to be reordered.
4. To be recommended for a degree, students must meet all admission requirements and satisfactorily complete the program requirements and non-program requirements for the degree. Students must be free from all financial indebtedness to The Citadel.
5. Students may apply for graduation and participate in commencement during the academic year in which they are completing their degree requirements.

Participation in the CGC Commencement Ceremony

1. Students must indicate on their application for graduation they intend to participate in commencement ceremonies. If a student does not confirm intent, they will not be permitted to participate in the ceremony.
2. All grade-point average (GPA) requirements have been met. That is, the cumulative and major grade-point averages for undergraduate students must be at least 2.000. The cumulative grade-point averages for graduate students must be at least 3.000.

3. Evening undergraduate students must be no more than 15 credit hours short of meeting degree requirements. Graduate students must be no more than 9 credit hours short of meeting degree requirements.
4. Students must properly wear official regalia for the commencement ceremony.
5. Students who complete all coursework and degree requirements during the summer session following that year's commencement exercises may participate in that ceremony or can decide to participate in the commencement ceremony the following year.
6. In some cases, students have completed their program requirements but are unable to participate in the commencement ceremony during the year they intended to graduate (e.g. military deployment, career relocation, or illness). In such cases, students may apply to graduate and participate in the next year's commencement ceremony. Students exceeding this one year of eligibility will not be allowed to participate in the CGC commencement ceremony.
7. Students who have earned a second master's degree within the same academic year will be recognized for both programs of study.
8. Children, parents, step-parents, or grandparents who are either graduates of the Corps of Cadets, the Veterans Program, or The Citadel Graduate College may present diplomas to their children, parents, step-parents, grandchildren or grandparents at the CGC commencement ceremony. The graduate must provide the CGC with their full name, relationship, and graduation year before the stated deadline and for approval.

Intellectual Property Policy Preamble

The Citadel has among its primary purposes teaching, research, and the expansion and dissemination of knowledge. Products of these endeavors include the development and use of intellectual property. It is the policy of the College that its faculty, staff, and students carry out their scholarly work in an open and free atmosphere that encourages publication and creation of such works without constraint but consistent with applicable laws and College policy. This policy will be in accord with the guidelines and criteria published in The American Association of University Professors' "Statement of Copyright" (Policy Documents and Reports. Ninth Edition, 2001, or subsequent editions).

Intellectual Property

Ownership of intellectual property will reside with the originator, whether a member of the faculty, staff, or a student, unless: (a) the property is created at the specific direction of the College; or (b) the originator has made exceptional use of College resources in creating it.

At the time when the work is directed by the College or at the time when the College makes exceptional resources available to the originator of intellectual property, the Provost and the originator will together determine ownership and will negotiate a written agreement concerning that property. These determinations will be made on a case-by-case basis.

Nondiscrimination Policy

The Citadel is committed to providing equal opportunities to men and women students in all campus programs, including intercollegiate athletics, in order to make The Citadel the best coeducational college in America.

This commitment requires that no discrimination shall occur in our admissions policies, academic programs or services, as well as employment practices on the basis of sex, race, color, religion or national origin. This policy is in accordance with Title IX of the Educational Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, and the Americans with Disabilities Act of 1990 as amended. Inquiries concerning the application of Title IX and other nondiscrimination laws may be referred to The Citadel's Affirmative Action Officer and Title IX Coordinator, Bond Hall, Room 369, 171 Moultrie Street, Charleston, South Carolina, 29409, 843-953-6989, or the Assistant Secretary of Education, Civil Rights Division, US Department of Education, Washington, DC 20201-2516.

Repeating a Course

Courses may be repeated only under the following circumstances:

- No courses may be repeated once a grade of "B" or higher has been earned.
- If a class in which a "C+" or "C" was earned is repeated, it may be repeated only one time.
- If a course is repeated, the last grade of record is used to determine whether course requirements for graduation have been met.
- The hours may be used only once toward graduation.
- All courses, previously passed or repeated, will be figured in the student's GPR. No grade previously recorded is removed from the transcript.

Satisfactory Progress and Length of Academic Program

Unless otherwise stated, students are expected to complete all degree requirements within a six (6) year period from the time of registration for the first graduate course in that program. Students enrolled in the Ed.S. in School Psychology program have seven (7) years to complete the degree. Students enrolled in the M.A. in Psychology: Clinical Counseling degree program have a five (5) year limit. Requests for an extension must be initiated by the student to the appropriate Department Head, who is responsible for notifying the student of the decision. Department Heads will forward recommendations through the program extension form, provided by the Office of the Registrar, to their appropriate academic dean. Extension approvals must be on file in the Registrar's Office prior to application for graduation. If an extension is granted, a probationary extension for one year is authorized. At the completion of that year, an additional extension may be authorized (if necessary) contingent upon the student having made adequate progress. "Adequate Progress" is defined as completing graduate work in two of the three semesters (summer session counting as a semester) of the year of probation. An average grade of "B" (3.0) for that year is also required. At all levels, the department or school will be responsible for oversight of student progress and initiation of action related to unsatisfactory progress.

It is the student's responsibility to be aware of courses that will not meet graduation time lines for satisfactory progress. Advisors should assist students with this calculation.

Student Academic Grievances

The academic grievance process of the college is reserved for the most serious alleged offenses. These matters deal not with differences of opinion, but with violations of due process; denial of individual rights; or unequal treatment/ discrimination based on sex, race, color, or national origin. Students who feel that they have an academic grievance are directed first to confer with the instructor or other individual(s) involved. Where this does not result in satisfaction or if this step is not feasible, the student should present the grievance in writing to the lowest appropriate level not involved in the grievance, department head or Dean.

If the student does not receive a response within a reasonable period of time, normally considered two weeks, a copy of the written grievance may be provided to the next higher academic level not previously involved in the grievance, i.e. the department head or the school Dean, with a request for assistance in resolving the grievance. A final appeal for satisfaction may be made to the Provost. The purpose of this process is to permit each level of the academic level of authority to have the opportunity to resolve the grievance satisfactorily. The Graduate College does not process academic matters. However, students are encouraged to provide a courtesy copy of grievances and appeals to the CGC for record. The CGC will monitor time lines and processes for compliance with procedure and will inform the appropriate level of the academic authority if procedure is not followed.

Student Appeal of Grade

A student who wishes to appeal the final grade assigned in a course must first confer with the instructor of the course in which the grade was received. If this does not result in satisfaction, the student should contact the appropriate department head or Dean who will review the matter. The faculty member and the student are both obligated to provide requested relevant information to the department head or Dean. The department head or Dean will present his/her findings to the student within ten working days of being contacted.

If this does not result in satisfaction, the student should contact the Provost. If deemed appropriate, the Provost will appoint a hearing board of three faculty members, with one designated as chair, and a student in good standing of the same student type as the appellant. This board shall have the authority to request testimony, hear witnesses, and study records and materials. The board shall forward its findings and recommendations to the Provost, who shall decide the case. The decision of the Provost is final.

Student Responsibility

The College and departments establish certain academic requirements that must be met before a degree is granted. Advisors, department heads, and Deans are available to help the student understand and arrange to meet these requirements, but the student is responsible for fulfilling them. If, at the end of a student's course of study, the requirements for graduation have not been satisfied, the degree will not be granted. For this reason, it is important for each

student to be acquainted with all academic, financial, and administrative requirements within the prescribed deadlines and time limits.

Dining

Coward Hall (The Citadel Dining Hall) - The price of meals for students living in the barracks is included in room and board fees. All other students, graduate or undergraduate, may obtain noon meal tickets for the established fee indicated in the online "Summer Schedule of Classes." Meal tickets for three meals a day (breakfast and lunch only on Fridays, no meals on Saturdays or Sunday) are also available to all interested students not living in the barracks. Individual meal tickets will not be sold. All students may purchase snacks and light meals in the food court in Mark Clark Hall.

Transcript

A transcript is a confidential document and is released only when students make a request online at www.citadel.edu/root/registrar-transcripts. The transcript fee is based on the method of delivery. Transcripts can be sent electronically, mailed, or picked up in the Registrar's Office. An official college transcript is one that is sent directly from The Citadel to the requestor. It bears the college seal, along with a date and official signature. Most colleges require the official record.

Transcripts sent from other colleges to The Citadel become the property of The Citadel and cannot be issued to the student as a third party.

Leave of Absence Policy

There are many reasons why graduate and evening undergraduate students could miss courses in a given academic year. These include medical reasons, military deployment, temporary changes in job status, or other reasons. In an effort to better identify students in these situations, along with providing a mechanism that grants a respite from the time limits for degree completion, a leave of absence policy has been created. This policy also excludes students who have not enrolled in courses in a given semester. Since they will be recognized as "on leave," these students will not be included in the list of students eligible to be contacted by Graduate College staff. The following outlines the parameters of The Citadel Graduate College's Leave of Absence Policy.

Leave Of Absence Request

Students who intend to take a pause from enrolling in courses for up to three semesters in a given academic year can communicate this to the Office of the Registrar through an online web form, available at <http://www.citadel.edu/registrar-forms>. Students may request a leave of absence for up to three semesters in an academic year (including summer, which constitutes a single term). Students with an approved leave of absence need not reapply for admission to the Graduate College unless the leave extends beyond three semesters in a given academic year. In such cases, they must request to reactivate their student record for their program of study using the form available on the Registrar's Office webpage mentioned above.

A leave of absence request should normally occur prior to the drop/add date. If the student's request is made after these deadlines, a reasonable and compelling explanation for the delay must accompany the request. In such cases, supporting documentation (e.g. medical, mental health,

deployment, temporary job transfer) should be provided with the request. The decision to grant the leave of absence is at the discretion of the Associate Provost of Enrollment Management. Students who request a leave of absence after the drop/add date during the semester may be responsible for at least a portion of the tuition for the classes in which they are enrolled. In such cases, students should consult with the Treasurer's Office as well as the Office of Financial Aid to determine if their time away from campus impacts their student loan eligibility.

Student Services

Student Success Center

The Citadel's Student Success Center provides a wide range of academic support services. Included among these are the enhancement of writing, mathematical, and reading skills; the general improvement of academic performance in all subject areas; and an emphasis on retention throughout The Citadel's academic community. Cadets and non-cadets have access to the Center. In addition to individual and small-group tutorials held in the Center, the staff conducts requested workshops for both graduate and undergraduate classes.

In all of its activities, the Center strives to assure that its efforts are consistent not only with the mission statement of The Citadel, but also with the objectives of the academic departments and specific graduate programs. Although there may be an occasional exceptional situation in which it is appropriate to restrict the nature of the assistance that may be offered by the Center (e.g., because of specific program accreditation issues that might impact, say, a particular assignment), all students are encouraged to take advantage of the resources offered by the Student Success Center.

CGC Class Ring

All CGC students graduating from degree programs are eligible for the CGC Class ring. CGC students may order their ring upon completion of all but the final two semesters of coursework/ internship and must possess an overall 2.0 GPA for undergraduate students or 3.0 GPA for graduate students. To place a class ring order, contact the Alumni Center at (843) 953-7698. The Alumni Center will verify eligibility with the CGC office.

Housing

Housing in barracks is available to any student enrolled in classes at The Citadel during Maymester or Summer School. However, it is not mandatory for any student to live on campus during Maymester and Summer School. The online "Schedule of Summer Classes" provides information on the cost of living in barracks housing.

Parking

Ample and secure parking is available on campus for all Maymester and Summer School students. All automobiles parked within The Citadel gates are required to have a parking tag. The tags are obtained in person in the Public Safety Office after paying the fee in the Treasurer's Office or by paying the fees in the public safety office. The fee for the parking tag is published in the "Schedule of Classes"

online at www.citadel.edu. Very limited parking is available for motorcycles on a first-come, first-served basis just outside the Hagood gate at the end of Huger Street. All motorcycles must have a Citadel parking tag. Two and three wheeled motorized vehicles may not be operated on campus.

Recreation

Campus recreational facilities are available to students enrolled in classes. These facilities include the Deas Hall weight room, racquetball courts, swimming pool, gymnasium, tennis courts, track, boating center, and The Citadel Beach House located on the Isle of Palms. Students must show The Citadel identification card to use these facilities.

Student Identification Cards

Maymester and Summer School students attending on-campus courses may obtain a Citadel identification card. The identification cards are obtained in Bond 244. This card is necessary for using The Citadel and area consortium libraries.

Specific Policies and Procedures for Evening/Online Undergraduate Programs

All other CGC policies and procedures apply.

The Citadel Evening Undergraduate Studies (EUGS) program serves the distinctive needs of adult and non-traditional students who are attempting to complete a four-year degree and/or further their professional development.

The EUGS program offers eleven undergraduate degrees: Bachelor of Arts in Criminal Justice; Bachelor of Arts in Intelligence and Security Studies; Bachelor of Arts in Political Science; Bachelor of Arts in Social Studies Education; Bachelor of Science in Business Administration; Bachelor of Science in Civil Engineering; Bachelor of Science in Construction Engineering; Bachelor of Science in Electrical Engineering; Bachelor of Science in Mechanical Engineering; Bachelor of Science in Nursing; Bachelor of Science in Tactical Strength and Conditioning.

In each of the undergraduate degree programs, a minimum of 36 of the total required credit hours must be taken at The Citadel. Credits gained through AP, CLEP, or any other “testing out” process may not be counted among those 36 credit hours. Acceptability of transfer credits is governed by the policy described under the Transfer Credits section below.

Fall, spring, and summer course schedules are available online. Information on programs, classes, and fees can also be obtained from the CGC office or online. Information on financial aid is available online through the Office of Financial Aid and Scholarships or by phone at (843) 953-5187.

2 plus 2 Program/Degree Completion

Students who wish to earn a degree from The Citadel Evening Undergraduate Studies (EUGS) program begin their coursework at another institution and complete their degree at The Citadel. Prerequisite courses (typically freshman and sophomore level courses) are taken at regionally accredited colleges and universities and transferred to The Citadel. The EUGS program at The Citadel offers the upper-level (junior and senior level) courses, and many general education courses, which enable students to complete the program and receive a baccalaureate degree from The Citadel.

All students must have at least 24 hours of college credit transferred to The Citadel prior to taking any courses at The Citadel.

Academic Classifications

Undergraduate students’ academic classification is based strictly on earned credit hours. The table below reflects the required number of earned credit hours for each designated academic classification.

Credits Earned	Academic Classification
0 – 14	First Semester Freshman
15 – 29	Second Semester Freshman
30 – 44	First Semester Sophomore
45 – 59	Second Semester Sophomore
60 – 74	First Semester Junior
75 – 89	Second Semester Junior
90 – 114	First Semester Senior
115 and above	Second Semester Senior

Academic classification is used by the Office of Financial Aid to determine loan eligibility.

Academic Criteria for Continuance

In order to be eligible to continue at The Citadel, a student must meet minimum standards regarding hours earned at The Citadel or properly transferred from another accredited institution, and an acceptable cumulative grade-point ratio must be maintained. Full-time students, those taking at least 12 credit hours each semester, must earn at least 24 semester hours each two-semester period. Part-time students must have passed at least 50 percent of the coursework attempted in the two previous semesters and included summer sessions. If a previously passed course is repeated, the hours may be used only once toward meeting requirements for hours passed.

The student must also meet the grade-point ratio (GPR) requirement for the appropriate category of credit hours of record as listed in the table below. In determining the category for credit hours of record, hours transferred into The Citadel from other institutions are included as credit hours of record.

The column “Quality Hours Plus Transfer Hours” includes:

1. All credit attempted for which a grade of “A,” “B,” “C,” “D,” or “F” was received at The Citadel,
2. Course work transferred from other colleges, and
3. Courses taken on a Pass-Fail basis.

Quality Hours Transfer & Pass/Fail Hours	Grade-Point Ratio for Continuance (on probation)	Grade-Point Ratio Plus for Continuance (without probation)
0-39	1.100	1.300
40-69	1.400	1.600
70-99	1.700	1.800
100 & above	1.900	2.000

This table shows the minimum academic progress students must make toward attaining the minimum acceptable overall grade-point ratio of 2.000 as they approach the total number of hours required in the course of study of their selected major. For the purpose of determining academic probation, criteria for continuance, dean’s list, graduation, and other academic matters, grade-point ratios will not be rounded.

Admission Policy

The CGC permits participation by evening undergraduate students in non-degree status as well as those who are pursuing an undergraduate degree. Students must have completed 24 credit hours and maintained a minimum 2.0 GPA to be considered for admission. Every applicant for a bachelor's degree must submit the following to the CGC office:

1. Completed evening undergraduate application.
2. Official transcripts sent directly from all regionally accredited colleges attended.
3. An official TOEFL score if English is not the native language.
4. Additional documentation may be requested for verification of U.S. citizenship.

Readmission Policy

A student who is discharged for academic reasons for the first time may apply for readmission after being out of school for one semester. Summer school does not constitute a semester in this instance. Students who are discharged for academic or disciplinary reasons may not, during the period of discharge, take courses for transfer to The Citadel. The deadline for the receipt of an application for readmission for Maymester and summer School is March 1st, for the spring term is October 1st, and for the fall term is June 1st.

Non-degree seeking undergraduate students are those who do not intend to become degree seeking students. While these students are allowed to take undergraduate courses at The Citadel under the following conditions, they cannot use these courses as a way of circumventing standard CGC admissions policy through the EUGS program.

1. Students who provide documentation of having graduated from an accredited high school or having completed the General Education Development (GED) examination may register for up to 15 credit hours of course work for personal or professional development only.
2. South Carolina residents over the age of 60 who meet degree or non-degree admissions requirements may register for courses on a space-available basis with no credit hours fee charged. All other fees must be paid.
3. High school seniors may be permitted to register for a maximum of two courses and the associated labs in the CGC under specialized programs, such as the Citadel's Teacher Cadet Program on the basis of written recommendation from their high school guidance counselor or principal.
4. Undergraduate transient students who wish to enroll in course work for transfer to another institution may be asked to present evidence they have met any course prerequisites.
5. A cadet who has been expelled from The Citadel is not eligible to attend any class at The Citadel—day, evening, or summer. A cadet who has been suspended or dismissed is not eligible to attend any class at The Citadel—day, evening, or summer—until accepted for readmission to the College.

Catalog of Record

The catalog bearing the number of the academic year in which undergraduate students enter The Citadel will be their catalog of record for matters of academic policy.

When a student is readmitted after an absence of at least three academic semesters (summer sessions will not be considered as semesters for this purpose), the catalog bearing the number of the academic year in which the student is readmitted will be the catalog of record for matters of academic policy and graduation requirements.

EUGS 101 Introduction to The Citadel Experience

All EUGS students must complete EUGS 101 in their first semester at The Citadel. This one-credit-hour online introductory course provides an overview of services offered by The Citadel as well as an overview of The Citadel's three core values of honor, duty, and respect.

All students are also encouraged to visit the Orientation webpage to become familiar with all the services available to them. The webpage is: www.citadel.edu/root/graduatecollege-current-students/orientation.

College Level Examination Program

Through College Level Equivalency Program (CLEP) Subject Examinations, undergraduate students are permitted to earn college course credits for knowledge they have gained in certain subject areas prior to beginning their college experience. Not all CLEP examinations are accepted by The Citadel. Therefore, the student must obtain prior approval through the Office of the Registrar. CLEP credits may be earned under the following conditions:

1. The score earned must meet or exceed the current minimum score recommended by CLEP for that subject area exam.
2. The amount of credit will be determined by the scope of the material measured.
3. Because of the laboratory experience is such an integral part of the Core Curriculum Science Requirement, credit for only the lecture portion of a science course may be earned through CLEP. The lab portions must be earned through a laboratory course.
4. Completing any portion of a requirement through CLEP must be approved by the head of the Department of Modern Languages. A complete listing of courses for which credit may be awarded through CLEP is available in the Office of the Registrar.

Combining Courses

Courses may be combined to meet a maximum of one general elective credit requirement under the following circumstances:

1. The courses to be combined must all be offered by the same department and must be related in some way.
2. The department head or Dean for the program in which the student is majoring must provide a recommendation and rationale for combining courses.
3. The Dean responsible for the academic program in which the student is majoring must grant final approval for the combining of courses.

Course Overload Policy

A maximum course load of 22 credit hours may be approved for either fall or spring semester. Overload (18-22 credit hours) requests must be made in writing to the academic dean.

Dean's List and Gold Star Certificates

Effective Fall 2015, EUGS students who distinguish themselves academically will be formally recognized by the College. Full-time students who earn a 3.2 GPA or higher each semester (Fall or Spring) in courses at The Citadel will earn Dean's List designation. Similarly, those who earn a 3.7 GPA or higher each semester in courses taken at The Citadel will be recognized with a Gold Star Certificate.

Definitions

Elective refers to a course that is required for graduation and may be any three-credit course offered by the College.

Approved Elective refers to a course that must be selected from a list of courses provided by the individual school or department.

Non-Departmental Elective refers to a course that is required for graduation and must be taken outside the major department. Students are encouraged to study areas outside their major to ensure as broad an education as is practical.

Students are reminded that it is expected that all coursework in the first two years of these programs be taken at other regionally accredited institutions and transferred to The Citadel. Courses at the 100- or 200-level will rarely be offered through CGC in a fall or spring semester. Some courses may be available in Maymester or Summer School at The Citadel.

Grades

Only letter grades are given to evaluate an undergraduate student's progress. The following definitions of letter grades are applicable:

- a. "A" represents superior attainment on the part of the student.
- b. "B" represents work that is clearly above the average, but not superior.
- c. "C" represents average attainment on the basic standards set for the course.
- d. "D" represents minimum attainment of the basic standards.
- e. "F" represents failure.
- f. "W" represents withdrawal from a course prior to the official deadline which is indicated in the college calendar and is no earlier than the Wednesday following the midterm grading period. Beyond that point, students will receive the grade of "F" should they fail to complete the course or complete it unsuccessfully. Under extenuating circumstances, the grade of "W" may be awarded after the established deadline to withdraw from a course. Such an action is taken only upon the recommendation of the instructor and requires the concurrence of the Dean responsible for the student's academic program. Supporting evidence is the responsibility of the student and must be submitted in writing to the responsible Dean.
- g. "I" The notation of "I" (for Incomplete) is used in instances when course requirements have been very nearly met but for

authorized reasons (illness, injury, family emergency, etc.) cannot be completed during the current semester. To be eligible for the grade of "I," students' work must be satisfactory at the time they are forced to terminate participation in the course. Unsatisfactory work will result in a failing grade. The grade of "I" must be cleared during the next semester in residence or within one year, whichever comes first, or the "I" becomes an "F." The summer session will not be considered a semester in this case. Students may not officially enroll in a course in which they currently have an "I." An extension of time due to extenuating circumstances may be authorized by the Dean responsible for academic program upon the recommendation of the instructor. The removal of the incomplete is the responsibility of the student. The grade of "IP" is assigned for courses in which requirements are not expected to be met in one academic term.

- h. "IP" The grade of "IP" must be removed in the next full semester, or the "IP" becomes an "F". The summer session will not be considered a semester in this case. Under extenuating circumstances, an extension may be awarded by the Associate Provost of Academic Affairs with the recommendation of the instructor. The removal of the "IP" is the responsibility of the student. Students may not enroll in a course in which they currently have an "IP".

Should a student fail to complete a semester or summer session for any reason, the grade in each course in which the student is then enrolled shall be determined by the individual faculty member.

No numerical symbol, bracket, or percentage is assigned the equivalent of any grade. Arbitrary distribution of grades according to some formula or curve is not permitted. However, by means of departmental supervision and consultation between instructors, every effort is made to obtain consistent standards within the department.

Students are expected to use proper grammar in all their course work, whether written or oral. Proper usage is expected at the college level and is required by all professors.

Any change of grade deemed necessary by the faculty member concerned must be based on instructor error and made within one month after the beginning of the next semester in attendance following the recording of the grade. In no case will a grade be changed after one month into the second semester after it was awarded. The summer session will not be considered a semester in this case. After grades in a course have been submitted to the Registrar's Office, every request for a change of grade must be approved by the department head and the Dean responsible for the academic program. Grade reports are available at the end of each semester and summer session.

Grade-Point Ratio Computation

In computing the undergraduate grade-point ratio, grades are weighted as follows:

Grade	Quality-Points Per Semester Hour
A	4
B	3
C	2
D	1
F, I, W	0

The grade-point ratio for any semester is determined by dividing the total number of quality points earned by the total number of hours for which the following grades were received: A, B, C, D, or F.

The cumulative grade-point ratio on which graduation, academic probation, and academic discharge are based is determined by dividing the number of quality points earned at The Citadel by the number of quality hours attempted at The Citadel. The number of quality hours for this purpose includes all credit hours attempted at The Citadel for which the following grades were received: A, B, C, D, or F. The number of quality points earned includes all quality points associated with quality hours earned at The Citadel. The Citadel does not award plus and minus grades for the undergraduate programs.

Taking or Repeating Courses to Improve the GPA

A student may not take or repeat a course which is taught at a lower level than or serves as a prerequisite for a course which the student has already completed. Courses may be repeated under the following conditions:

1. No course may be repeated once a grade of “B” or higher has been earned.
2. If a course is repeated, the last grade of record is used to determine whether course requirements for graduation have been met.
3. If a previously passed course is repeated, the hours may be used only once toward meeting requirements for total hours passed.
4. When courses are repeated under the conditions described above, the original course grade will be replaced by the newer grade when calculating students’ Grade Point Averages (GPA’s), quality hours, and earned credit hours. Both the old and new grades will appear on students’ transcripts, but only the newer grade will be used in calculating GPA’s.
5. The maximum number of hours for which Grade Replacement will be allowed over the course of a student’s undergraduate career is 16. If a student repeats more than 16 hours of credit, both the old and the new grade will be used to calculate the student’s Grade Point Average (GPA), quality hours, and earned credit hours.
6. For the purpose of determining graduation honors (e.g., cum laude, etc.), both the old grade and the new grade will be used in making the GPA calculation to determine honors eligibility.

Academic Forgiveness

Any undergraduate student who has been separated from The Citadel for 48 or more consecutive months is eligible to apply for Academic Forgiveness. Upon readmission, a student seeking to apply for Academic Forgiveness must first complete 24 hours at The Citadel with a Grade Point Average (GPA) of 2.0 or higher on those 24 hours in order to apply for Academic Forgiveness.

To apply for Academic Forgiveness, a readmitted student who has met the minimum GPA requirement on 24 hours must make a formal written request for an academic “fresh start” and must meet in person with the Associate Provost for Academic Affairs to discuss that application.

If a student is granted Academic Forgiveness, then all previous coursework completed at The Citadel will be treated as transfer credit (i.e., as pass/fail coursework) for the purpose of computing the student’s cumulative Citadel GPA; in addition, courses which the student previously passed at The Citadel with a grade of “D” will continue to be counted in the student’s total earned hours and will not have to be repeated. All previous grades will remain on the student’s permanent record, but they will not be computed in the student’s GPA. The transcript will contain this notation: “Academic Forgiveness was granted as of (date of readmission); grades earned at The Citadel prior to this date are not included in this student’s GPA calculation.” Students who have been granted Academic Forgiveness will not be eligible to receive graduation honors (e.g., cum laude, etc.).

Pass-Fail

Evening Undergraduate students with cumulative grade-point ratios of 2.0 or higher may elect to take elective courses on a Pass-Fail option. Normally, no more than one course may be taken under this option each semester. A student may take the Pass-Fail option only on courses which meet elective requirements. Students may not change their decision to take a course on the Pass-Fail basis after the first two weeks of the term. Courses completed on the Pass-Fail option carry graduation credit, but quality points are not awarded. These courses are not included in grade point ratio computations. Instructors report grades as usual, A through F. The Registrar’s Office translates grades as follows:

- The grades of “A” through “C” as “S” (satisfactory, pass-for credit)
- The grades of “D” or “F” as “U” (unsatisfactory, fail-no credit)
- Students desiring to take a course on the Pass-Fail option should contact the Registrar’s Office.

Requirements for Graduation

For graduation, an undergraduate student must complete one of the departmental major courses of study stated in the catalog of record and must achieve a minimum cumulative grade-point ratio of 2.0 and a minimum grade point ratio of 2.0 in all coursework in the major.

Commencement Honors

A degree *summa cum laude* is awarded to undergraduate students in the graduating class who have achieved a grade-point average of 3.900-4.000. A degree *magna cum laude* is awarded to undergraduate students in the graduating class who have achieved a grade-point average of 3.700-3.899. A degree *cum laude* is awarded to undergraduate students in the graduating class who have achieved a grade-point average of 3.500-3.699.

Transfer Credits

Normally, only courses which are comparable in content and credit hours to specific courses offered by The Citadel and in which grades of “C” or better have been earned at an accredited institution (e.g. Southern Association of Colleges, North Central Association of Colleges and Schools, etc.) will be considered for transfer. However, the Dean responsible for the academic program in which the student is majoring may accept for transfer to meet General Elective credits courses that are not offered by The Citadel but

which are considered to be worthy of credit as electives and in which grades of “C” or higher have been earned. The respective department heads or Deans, as appropriate, are responsible for considering all transfer courses that are comparable to courses offered by The Citadel. Course work taken at another college and accepted for transfer by The Citadel need not be applicable to a student’s major. Courses transferred from another college will not be noted in the student’s grade-point ratio at The Citadel. Transcripts sent from other colleges to The Citadel become the property of The Citadel and cannot be issued to the student or a third party.

To ensure that courses taken away from The Citadel will be accepted for transfer, students must obtain written, prior approval through the Office of the Registrar.

All transfer credits are provisional. If an academic unit determines within a reasonable period of time after classes begin that the student is not prepared to take a course for which the course transferred is a prerequisite, the allowance of credit is withdrawn, and the student must take the prerequisite course at The Citadel.

Transfer Students

An undergraduate student may be accepted into evening undergraduate degree-seeking status in the CGC under one of the following conditions:

1. The Citadel and several South Carolina technical colleges have articulated agreements that permit students to complete the first two years of study in engineering, business administration, criminal justice, political science, or Social Studies education. These credits are transferred to The Citadel, where a student can complete the final two years for a Bachelor of Arts Degree in Criminal Justice, Political Science or Social Studies Education; or a Bachelor of Science Degree in Business Administration, Civil Engineering, Electrical Engineering, or Mechanical Engineering. A student needs to submit an application and official transcript from one of the partnering technical colleges with a minimum of 24 credit hours in order to be admitted to The Citadel through The CGC. Details of the 2+2 programs are available online. These programs are outlined in this catalog under their respective departments.
2. Applicants may be admitted into degree-seeking status if they have transfer credit from other regionally accredited institutions that meet the requirements of the first two years of the degree program they wish to pursue. The student must provide official transcripts from all other colleges attended. Upon completion of the first 24 semester hours with a grade point ratio of at least 2.0, the student may be admitted to degree-seeking status in the selected major upon review by the academic department. If this minimum grade point ratio is not achieved within the first 24 semester hours, admission will be denied and participation in The CGC will be terminated.
3. After acceptance by the program, any non-U.S. citizen must be cleared for registration by the International Student Coordinator. An official TOEFL score is required of any applicant for whom English is not the native language.

Academic Probation

Undergraduate students are placed on academic probation for any semester when their cumulative grade-point ratio based on courses taken at The Citadel fails to meet requirements for continuance without probation as outlined in the Academic Criteria for Continuance table. Students will be removed from academic probation after the semester their cumulative grade-point ratio meets the requirements of the table. Students on academic probation are not making satisfactory progress, and restrictions, such as limiting the number of credit hours in which they may enroll, may be enforced.

Cadets and Evening Undergraduate Studies (EUGS)

In some instances, students may decide to transfer from the South Carolina Corps of Cadets (SCCC) to the Evening Undergraduate Studies (EUGS) program. If a cadet is in good academic standing and is not serving a suspension or dismissal from the SCCC for disciplinary or honor issues, he or she may simply apply to the EUGS program through The Citadel Graduate College.

In such cases, a review of the cadet’s transcripts will be made by the respective academic advisor, who will also explain the differences between the two programs, including a different class ring, diploma, and participation in the Graduate College commencement ceremony. The Registrar’s Office will amend the degree audit to reflect the differences in general education and major requirements.

If a cadet has been suspended or dismissed from the SCCC for academic reasons and wishes to apply to an EUGS program of study after serving the imposed punishment, the student is required to meet with the Associate Provost of Academic Affairs who will, if appropriate, create an academic improvement plan that the student agrees to follow as a condition of reinstatement to The Citadel. If a cadet is suspended or dismissed from the SCCC for non-academic reasons, admission into an EUGS program of study after serving the imposed punishment is contingent upon completing the criteria, if any, for reinstatement outlined in his or her special order. A copy of the special order, along with documented evidence of completion of the stipulations, should be presented to the Associate Provost of Academic Affairs, who will determine if all the conditions for reinstatement have been met.

Although transfer from the SCCC into the EUGS is usually permanent, a former cadet in good standing in EUGS may petition to be readmitted to the SCCC. The student seeking reinstatement in the SCCC must make written application to the Associate Provost for Academic Affairs, explaining the reason for the proposed transfer. The student must meet all criteria for readmission, and, if granted approval by the Associate Provost for Academic Affairs to return to the SCCC, must follow the readmission process as put forth in the SCCC catalog.

If a cadet has been expelled or resigned from the SCCC for any reason, he or she is not eligible to return to The Citadel in any program.

GRADUATE DEGREE PROGRAMS

TOMMY AND
VICTORIA BAKER
SCHOOL OF BUSINESS

MASTER OF BUSINESS
ADMINISTRATION



Master of Business Administration

Tommy and Victoria Baker School of Business
843-953-5056
www.citadel.edu/mba

Jeremy Bennett, Ph.D.
MBA Program Director
jbennet5@citadel.edu

Brian Tucker, M.F.A.
MBA Advisor
843-953-5257, btucker2@citadel.edu

Mission Statement

The mission of the Tommy and Victoria Baker School of Business is to educate and develop leaders of principle to serve a global community.

Admission Requirements

Requirements for admission to the program conform to the general regulations of The Citadel Graduate College (CGC) and the accreditation standards of the Association to Advance Collegiate Schools of Business (AACSB). Admission decisions are based on a holistic review of standardized test score performance, previous scholastic performance, professional experience, and professional recommendations. An undergraduate degree in business is not a requirement for admission. Applicants can be admitted to begin Fall, Spring, or Summer semester.

Provisional Admission: Applicants may be admitted provisionally if their GPA and/or GMAT/GRE score does not meet the minimum standard for admission. Students admitted provisionally are limited to take two courses and must receive a grade of “B” or better in each course to continue in the MBA program.

Admission Denied: Applicants denied admission may petition for reconsideration in writing to the MBA Program Director.

Applications to the MBA Program are accepted on a continual basis. Students may begin the program in any Fall, Spring, or Summer session. Applicants are encouraged to submit all materials as early as they can prior to the term in which they plan to begin.

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of official transcripts from the institution where the highest degree was earned. Official transcripts from all previously attended colleges and universities is recommended, including military transcripts. Student must be able to demonstrate an earned undergraduate degree

3. Submission of official scores from a valid (5 years old or less) Graduate Management Admissions Test (GMAT) or Graduate Record Examination (GRE). A waiver may be considered for applicants who already hold a graduate degree. MCAT or PCAT scores are acceptable for MD and PharmD applicants.
4. Submission of a resume detailing previous work experience.
5. Submission of two letters of recommendation from someone familiar with your academic and/or professional work. Professors, supervisors, and military personnel are acceptable references.

Program Requirements

Students are expected to complete all degree requirements within six years from the term of admission into the MBA program.

All admitted students follow the same curriculum, regardless of undergraduate education or work experience.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

CORE COURSES (30 credit hours)

BADM-702 MBA Essentials I
BADM-703 MBA Essentials II
BADM-705 Managing Innovation

BADM-719 Information Technology Management
BADM-728 Accounting for Executives
BADM-731 Quantitative Methods for Operations Management
BADM-734 Case Studies in Finance
BADM-735 Ethical Leadership and Org. Behavior
BADM-737 Strategic Marketing
MBA CAPSTONE COURSE*

*This course should be taken in the student’s final semester.

ELECTIVE COURSES (Choose 2 courses, 6 credit hours)

BADM-713 or LDRS-723 Communications for Leadership
BADM-716 Legal and Ethical Decision Making
BADM-726 Financial Statement Analysis
BADM-750 Lecture in Business Administration
BADM-751 Lecture in Accounting
BADM-752 Lecture in Economics
BADM-753 Lecture in Finance
BADM-754 Lecture in Management
BADM-755 Lecture in Marketing
BADM-756 Financial Modeling
BADM-757 Personal Finance
BADM-762 Negotiation Strategies
BADM-764 Entrepreneurship
BADM-766 or LDRS 766 Human Resource Development

BADM-768 Human Resource Management
BADM-772 International Management
BADM-774 International Business
BADM-776 International Marketing
BADM-778 Investments
BADM-782 Advanced Topics in Information Technology
BADM-784 Business and Economic Forecasting
BADM-786 Contemporary Accounting and Advanced Problems
BADM-788 Consumer Behavior
BADM-790 Production/Operations Strategies for Manufacturing and Service Industries
BADM-792 Financial Markets and Institutions
BADM-795 Independent Study

TOTAL PROGRAM REQUIREMENTS: 36 Credit Hours

Descriptions of courses are listed in the last section of this catalog. For Special Topics courses (BADM750-755), descriptions may be found on the MBA website.

Course Load: Students are limited to 12 credit hours maximum each semester, but no more than 6 credit hours in each 8-week term. The Baker School of Business offers most MBA courses in an accelerated 8-week format. For students who work full-time, the recommendation is no more than 2 courses per semester. Students who have been admitted on a provisional basis are limited to six credit hours in their first semester. Students may request in writing to the MBA Program Director for any exceptions.

Course Availability: All core courses are available each semester. Elective courses are not offered on a regular schedule. Courses are taught as hybrid (in person in the evening) or completely online. Students are encouraged to register early and strategize with their academic advisor. Once a class is full, students may place themselves on the waitlist and will be notified by email upon space availability.

Transfer Credit: A maximum of six credit hours from a regionally accredited institution may be approved for transfer credit (except Capstone), provided: (1) the course is determined to be equivalent to one of the advanced or elective courses at The Citadel, (2) a grade of “B” or better was received in the course, and (3) credit was earned within the five years of admission into the MBA program at The Citadel.

Grading: All students are subject to the Academic Standards section under Policy Information of The Citadel Graduate College catalog.

DEPARTMENT OF
LEADERSHIP STUDIES

MASTER OF SCIENCE IN
LEADERSHIP



Master of Science in Leadership

Department of Leadership Studies

843-953-8401

www.citadel.edu/root/ms-leadership

leadership@citadel.edu

Faith Rivers James, J.D.

Associate Provost for Leadership,

Department Head & Professor of Leadership

friversjames@citadel.edu

Dr. John Altick

Leadership Studies Advisor

843-953-2425, jaltick@citadel.edu

Mission Statement

The mission of The Citadel's Master of Science in Leadership program is to enhance the ability of students from any academic background and level of professional experience to perform effectively as principled leaders in their present or future leadership roles. The program utilizes a holistic approach achieved through interdisciplinary and integrated courses to engage students in comprehensive learning about leadership in applied contexts. Designed for those seeking initial leadership positions or career progression in one's current employment, the curriculum allows students to tailor the focus of their study toward individual and career interests.

Admission Requirements

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of an official transcript reflecting the highest degree earned from a regionally accredited college or university.
3. Submission of official Graduate Record Examination (GRE) or the Miller Analogies Test (MAT) score. The minimum for the GRE is a verbal and quantitative combination of 290. The minimum for the MAT is a score of 396.* Admission test must have been taken within the last five years.**

Students accepted into the Master of Science in Leadership program will be automatically enrolled into the Graduate Certificate in Leadership.

*Students who fail to meet the minimum score requirement may be *provisionally accepted* into the M.S. degree program provided all other admission requirements have been met. Students who score between 283-289 on the GRE or 380-395 on the MAT may apply for provisional status. Upon completion of the first eight hours of degree coursework, with a minimum

GPA of 3.50, the student is considered fully admitted. Admission tests must be current within five (5) years of application and official score sent directly to the CGC office at the request of the student.

**The *testing requirement can be waived* if an individual has successfully completed 9 hours in the Leadership Certificate or Military Leadership Certificate. Successful completion requires a 3.0 GPA average with no course grades below C+.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

Program Requirements

The Master of Science in Leadership is a 36 credit-hour program consisting of the following requirements:

1. Research Methods (six hours)

PSCI-500 Seminar in Social Science, and one selected methods course:

PSCI-501 Research Methods in Social Science

or

EDUC-512 Data Collection and Analysis

2. Human Behavior (six hours)

PSYC-500 Human Growth and Development

PSYC-570 Social and Cognitive Foundations of Interpersonal Behavior

3. Leadership (24 hours)

LDRS-710 Ethics, Values and Principled Leadership

LDRS-711 Leading Change: Organization Development and Transformation*

LDRS-712 Leading Teams: Coaching, Culture, Diversity, and Globalization

LDRS-714 Strategic Leadership, Vision, Mission and Contemporary Issues*

LDRS-715 Leadership Capstone Project

LDRS-722 Leadership in Organizations: Principles and Practices

LDRS-723 **or** BADM-713 Communications for Leadership

LDRS-766 **or** BADM-766 Human Resource Development


*LDRS 722 is a prerequisite for these courses.

4. Electives (optional; three hours)

LDRS-716 Independent Study in Leadership

Total: Thirty-six (36) hours

Descriptions of courses are listed in the last section of this catalog.



SCHOOL OF ENGINEERING

MASTER OF SCIENCE

- PROJECT
MANAGEMENT
- CIVIL ENGINEERING
- ELECTRICAL
ENGINEERING
- MECHANICAL
ENGINEERING

Master of Science in Project Management

School of Engineering

843-953-9811

www.citadel.edu/root/pmgt-admission

Dr. David Greenburg, dgreenbu@citadel.edu

Mission Statement

The mission of The Citadel's Master of Science in Project Management degree program is to equip a diverse professional student population with the applied knowledge, principled leadership, and management skills needed to effectively lead an organization's implementation of projects and multi-disciplinary initiatives.

Admission Requirements

Applicants will be admitted to the Master of Science in Project Management (MSPM) degree program on the basis of professional and scholastic achievement, along with their aptitude for graduate study and experience. Anyone holding a bachelor's degree from a regionally accredited college or university is eligible for consideration. A technical or engineering background is not a requirement for admission.

All material must be received by the CGC office on or before the following dates to assure consideration to the MSPM degree program during the applicable semester.

Admission Term:	Materials Due:
Fall	August 1
Spring	December 1
Summer	April 1

For degree-seeking students:

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of an official transcript of the baccalaureate degree and any graduate degrees from a regionally accredited college or university.
3. Submission of resume detailing work experience or permission from Department Head.
4. Submission of two letters of recommendation.
5. Submission of a one-page letter of intent that provides concise, complete answers to the following questions.
 - a. How has your experience prepared you for MSPM graduate courses?
 - b. How will your knowledge, skills, and attitude contribute to the MSPM learning community?
 - c. What do you hope to gain from the MSPM graduate program?

Students enrolled in the MSPM will automatically be enrolled in the Graduate Certificate in Technical Project Management (TPM).

For non-degree seeking professionals wanting to take graduate-level courses to fulfill professional practice requirements:

1. Completion of the online graduate application along with the non-refundable application fee
2. Submission of an official transcript of the baccalaureate degree from a regionally accredited college or university.
3. Submission of resume detailing previous work experience
4. Permission of department is required

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

Program Requirements

The Master of Science in Project Management is conferred upon those candidates who successfully complete an approved program of study consisting of 30 semester hours of graduate credit as delineated below.

Students are expected to complete all degree requirements within a six-year period from the time of registration in their first graduate course at The Citadel. Any transfer credit must have been earned within six years prior to admission into The Citadel MSPM program and must be approved by the department head. No transfer credit will be accepted for core courses. Any prerequisites for applicable courses must be met.

All degree candidates must:

1. Complete four core Technical Project Management (TPM) courses for a total of 12 hours:
 - PMGT-650 Overview of Technical Project Management
 - PMGT-651 Technical Project Planning and Scheduling
 - PMGT-652 Applications of Quality Management
 - PMGT-653 Technical Project Support and Operations
2. Complete two core Leadership courses for a total of 6 hours. Courses include:
 - PMGT-671 Project Manager Leadership Development
 - PMGT-672 Applied Leadership Concepts
3. Complete a plan of study totaling 12 hours of elective courses taken from the following areas. Elective courses can be taken in multiple areas of study or from one area of study.

Areas of Study

- Technical Program Management
 - PMGT-660 Overview of Technical Program Management
 - PMGT-661 The Legal and Contractual Aspects of Program Management
 - PMGT-662 Program Development Strategies and Processes
 - PMGT-685 Decision and Risk Analysis
- Systems Engineering Management
 - PMGT-680 Systems Engineering Management Fundamentals
 - PMGT-681 Requirements Development and Management
 - PMGT-682 System Verification and Validation
 - PMGT-683 Systems Modeling and Integration
 - PMGT-684 Human System Integration
 - PMGT-685 Decision and Risk Analysis

- **Organizational Leadership**
 BADM-713 or LDRS 723 Communication for Leadership
 LDRS-722 Leadership in Organizations
 BADM-735 Ethical Leadership & Organizational Culture
 PMGT-690 Independent Study
 PSYC-500 Human Growth and Development
 PSYC-523 Statistics and Research Design
 PSYC-570 Social and Cognitive Foundations of Interpersonal Behavior
- **Civil and Environmental Engineering**
 CIVL-502 Sustainability
 CIVL-504 Designing for Natural and Man Made Hazards
 CIVL-506 Geographic Information Systems
 CIVL-508 Monitoring of Civil Engineering Infrastructure
 CIVL-575 Traffic Engineering Operations
 CIVL-576 Roadway Geometric Design
 CIVL-602 Water Quality Modeling and Management
 CIVL-604 Aquatic Chemistry
 CIVL-608 Structural Load and Systems
 CIVL-610 Wood Design
 CIVL-612 Urban Transportation Planning
 CIVL-614 Ground Improvement
 CIVL-616 Deep Foundations
 CIVL-640 Urban Mobility Infrastructure Policy and Planning
 CIVL-642 Public Health, Physical Activity, and Design of the Built Environment

 CIVL-650 Special Graduate Topics in Civil Engineering
 CIVL-655 Masonry Structural Design
 CIVL-657 Intermediate and Matrix Structural Analysis
 CIVL-711 Design of Masonry, Wood, and Cold Formed Steel Structure

 CIVL-712 Design of Coastal Structures and Bridges
 CIVL-713 Design of Civil Engineering Systems for Natural and Manmade Hazards

 CIVL-714 Advanced Steel Design
 CIVL-715 Advanced Reinforced Concrete Design
 CIVL-716 Prestressed Concrete
 CIVL-718 Matrix and Finite Element Analysis
 CIVL-719 Elastic Stability of Structures
 CIVL-720 Dynamic Analysis of Structures
 CIVL-721 Earthquake Engineering for Structural Engineers
 CIVL-730 Geotechnical Earthquake Engineering
 CIVL-731 Geo-environmental Engineering
 CIVL-732 Advanced Soil Mechanics
 CIVL-733 Advanced Foundation Design
 CIVL-734 Soil Behavior
 CIVL-740 Transportation Safety Engineering
 CIVL-741 Travel Demand Forecasting
- **Electrical and Computer Engineering**
 ELEC-605 Advanced Power Systems
 ELEC-615 Spectral Analysis
 ELEC-625 RF Systems
 ELEC-635 Adaptive Signal Processing
 ELEC-645 Data Communication Networks
 ELEC-655 Digital Communications
 ELEC-665 Fundamentals of Advanced Energy Conversion
 ELEC-675 Computer Architecture
 ELEC-685 Digital Control System

- **Mechanical Engineering**
 MECH-604 Advanced Mechanics of Materials
 MECH-605 Materials and Process Selection
 MECH-606 Fatigue and Fracture
 MECH-611 Advanced Fluid Mechanics
 MECH-615 Applied Heat Transfer
 MECH-617 Advanced Topics in Renewable Energy Systems

 MECH-618 Energy Sources, Technology, and Policy
 MECH-619 Power Systems Engineering
 MECH-625 Computer-Aided Design and Analysis
 MECH-631 Advanced Engineering Mathematics
 MECH-635 Computer-Aided Design and Analysis Laboratory

 MECH-640 Manufacturing Process and Design
 MECH-645 Machine Design
 MECH-660 Advanced Design
 MECH-650 Modeling, Analysis, and Control Systems
 MECH-655 Advanced Mechatronics
 MECH-670 Applied Aerodynamics
 MECH-702 Theory of Elasticity
 MECH-703 Theory of Plasticity
 MECH-708 Mechanics of Composite Materials
 MECH-711 Compressible Flow
 MECH-722 Computational Methods in Thermal Sciences
 MECH-750 Introduction to Modern Control Engineering
 MECH-755 Nonlinear Control Engineering

Total Credit Hours: 30

Descriptions of courses are listed in the last section of this catalog.

Transfer Credit: A maximum of two courses (6 credit hours) may be transferred in from an accredited college or university. (except for PMGT 650, PMGT 651, PMGT 652, PMGT 653, PMGT 671, and PMGT 672), provided: (1) grades of “B” or better were received in the courses being considered; (2) credit was earned within six years prior to admission into The Citadel MSPM program; and (3) each course has been approved by the department head.

Transfer Credit from The Citadel: A maximum of 12 hours may be transferred from another Citadel graduate degree program where appropriate, provided that core degree requirements are met.

Grading: All students are subject to the Academic Standards section under Policy Information of The Citadel Graduate College catalog.

Requirements for Graduation: The degree of Master of Science in Project Management may be conferred upon those students who successfully complete the 30 hours of graduate coursework as specified above with a grade-point ratio (GPR) of 3.0 or better on hours earned at The Citadel. Completion of more than 30 credit hours of advanced graduate coursework will only be allowed for professional development, and may not be used to increase GPR to the 3.0 required for graduation.

Master of Science in Civil Engineering

School of Engineering,
843-953-5083

www.citadel.edu/root/cee-graduate-programs/master-of-science-civil-engineering

Dr. William J. Davis, P.E.

jeff.davis@citadel.edu

Mission Statement

The mission of The Citadel's Master of Science in Civil Engineering program is to provide a student-centered learning environment focused on advanced applied engineering techniques and professional skills development for principled leaders in the engineering community through a rigorous curriculum, emphasizing practical engineering concepts, strong professional values, and a disciplined work ethic.

Admission Requirements

Applicants will be admitted to the Master of Science in Civil Engineering (MSCE) degree program on the basis of professional and scholastic achievement, along with their aptitude for graduate study. Other qualities appropriate to graduate study are also considered. Anyone holding a bachelor's degree from an ABET accredited college or university is eligible for consideration. Other technical bachelor's degrees will be considered on a case-by-case basis.

Provisional Admission: Applicants may be admitted provisionally if their GPA does not meet minimum requirements. Students admitted provisionally are limited to take two civil engineering courses and must receive a grade of "B" or better in each engineering course to continue in the program.

All material must be received by the CGC office on or before the following dates to assure consideration to the MSCE degree program during the applicable semester.

Admission Term:	Materials Due:
Fall	July 20
Summer	April 15
Spring	December 1

For degree-seeking students:

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of an official transcript of the baccalaureate degree from an ABET accredited engineering program or approved alternative.
3. Submission of two letters of recommendation.

For non-degree seeking professionals wanting to take graduate-level courses to fulfill professional practice requirements:

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of an official transcript of the baccalaureate degree from an ABET accredited engineering program or approved alternative.
3. Permission of department is required.

Program Requirements

The Master of Science in Civil Engineering is conferred upon those candidates who successfully complete an approved program of study consisting of 30 semester hours of graduate credit as delineated below.

Students are expected to complete all degree requirements within a six-year period from the time of registration in their first graduate course at The Citadel. Any transfer credit must have been earned within six years prior to admission into The Citadel MSCE program. Any prerequisites for applicable courses must be met.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

COURSE REQUIREMENTS

All degree candidates must:

1. File a plan of study outlining the intended areas of interest and listing the top four corresponding courses of interest
2. Complete at least six courses (18 hours) from the civil engineering areas of study below.
3. Complete four courses (12 hours) in technical or non-technical classes listed below. Other electives will be considered on a case-by-case basis with approval from the department head.

Civil Engineering Areas of Study

- **Geotechnical Engineering**
 - CIVL 730 Geotechnical Earthquake Engineering
 - CIVL 731 Geo-environmental Engineering
 - CIVL 732 Advanced Soil Mechanics
 - CIVL 733 Advanced Foundations Design
 - CIVL 734 Soil Behavior
- **Structural Engineering**
 - CIVL 504 Designing for Natural and Manmade Hazards
 - CIVL 608 Structural Loads and Systems
 - CIVL 610 Wood Design
 - CIVL 655 Masonry Structural Design
 - CIVL 657 Indeterminate and Matrix Structural Analysis
 - CIVL 711 Design of Masonry, Wood & Cold Formed Steel Structures
 - CIVL 712 Design of Coastal Structures and Bridges
 - CIVL 713 Design of Civil Engineering Systems for Natural & Manmade Hazards
 - CIVL 714 Advanced Steel Design
 - CIVL 715 Advanced Reinforced Concrete Design
 - CIVL 716 Analysis & Design of Prestressed Concrete

- CIVL 718 Matrix & Finite Element Analysis Members
- CIVL 719 Elastic Stability of Structures
- CIVL 720 Dynamic Analysis of Structures
- CIVL 721 Earthquake Engineering for Structural Engineers

- **Transportation Engineering**

- CIVL 506 Geographic Information Systems
- CIVL 575 Traffic Engineering Operations
- CIVL 576 Roadway Geometric Design
- CIVL 612 Urban Transportation Planning
- CIVL 640 Urban Mobility Infrastructure Policy & Planning
- CIVL 642 Public Health, Physical Activity, & Design of the Built Environment
- CIVL 740 Transportation Safety Engineering
- CIVL 741 Travel Demand Forecasting

Non-Technical Electives

- **Business Administration**

- BADM 702 MBA Essentials I
- BADM 703 MBA Essentials II
- BADM 713 or LDRS 723 Communication for Leadership
- BADM 716 Legal & Ethical Environment for Decision Makers
- BADM 735 Ethical Leadership and Organizational Behavior

- **Engineering Leadership and Program Management**

- PMGT 650 Overview of Tech Project Management
- PMGT 651 Technical Project Planning & Scheduling
- PMGT 652 Applications in Quality Management
- PMGT 653 Tech Project Support & Operations
- PMGT 661 The Legal & Contractual Aspects of Program Management
- PMGT 671 Project Manager Leadership Development
- PMGT 672 Applied Leadership Concepts

- **Leadership**

- LDRS 710 Ethics, Values and Principled Leadership
- LDRS 711 Leading Change: Organization Development and Transformation
- LDRS 712 Leading Teams: Coaching, Culture, Diversity, & Globalization
- LDRS 714 Strategic Leadership, Vision, Mission & Contemporary Issues
- LDRS 722 Leadership in Organizations

Course / Certificate Availability: The courses/ certificates will be offered based on student preferences/ overall demand indicated in your plan of study to be submitted after acceptance. Students should be aware course/ certificate offerings will be based on minimum class size enrollment. The Civil and Environmental Engineering Department will continually monitor student interest to expedite completion of your program of study.

Transfer Credit from The Citadel: A maximum of 12 hours may be transferred from one Citadel graduate degree program where appropriate, provided that core degree requirements are met.

Grading: All students are subject to the Academic Standards section under Policy Information of The Citadel Graduate College catalog.

Requirements for Graduation: The degree of Master of Science in Civil Engineering may be conferred upon those students who successfully complete the 30 hours of graduate coursework as specified above with a grade-point ratio (GPR) of 3.0 or better on hours earned at The Citadel. Completion of more than 30 credit hours of advanced graduate coursework will only be allowed for professional development, and may not be used to increase GPR to the 3.0 required for graduation.

Transfer Credit: A maximum of two courses (6 credit hours) may be transferred in from a regionally accredited college or university, provided: (1) grades of “B” or better were received in the courses being considered, (2) credit was earned within six years prior to admission into The Citadel MSCE program, and (3) each course has been approved by the department head. A maximum of five courses (15 credit hours) may be transferred in from Clemson University, provided: (1) grades of “B” or better were received in the courses being considered, (2) credit was earned within six years prior to admission into The Citadel MSCE program, and (3) each course has been approved by the department head.

Master of Science in Electrical Engineering

Department of Electrical and Computer Engineering

843-953-5057

<http://www.citadel.edu/root/ece>

Dr. Robert J. Barsanti,

robert.barsanti@citadel.edu

Mission Statement

The Master of Science in Electrical Engineering program is designed for students seeking advanced engineering techniques and professional development skills in the field of electrical engineering. Our goal is to provide both recent graduates and professionals in the engineering community with a rigorous curriculum containing theoretical and practical engineering concepts for building additional expertise in a high-paced technological society.

Admission Requirements

Applicants will be admitted to the Master of Science in Electrical Engineering (MSEE) degree program on the basis of professional and scholastic achievement, along with their aptitude for graduate study. Other qualities appropriate to graduate study are also considered. Anyone holding a bachelor's degree from an ABET accredited college or university is eligible for consideration. Other technical bachelor's degrees will be considered on a case-by-case basis.

For degree seeking students:

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of an official transcript of the baccalaureate degree from an ABET accredited engineering program or approved alternative.
3. Submission of official copy of Graduate Record Examination (GRE) score. Admission test must have been taken within the last five years. The GRE requirement can be waived if applicant has a previously earned master's degree.
4. Submission of two letters of recommendation.

For non-degree seeking students:

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of an official transcript of the baccalaureate degree from an ABET accredited engineering program or approved alternative.
3. Permission of the department head or program manager.

Program Requirements

The Master of Science in Electrical Engineering is conferred upon those candidates who successfully complete an approved program of study consisting of 30 semester hours of graduate credit as delineated below.

Students are expected to complete all degree requirements within a six-year period from the time of registration in their first graduate course at The Citadel. Any transfer credit must have been earned within six years prior to admission into The Citadel MSEE program. Any prerequisites for applicable courses must be met.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

GRADUATION REQUIREMENTS (Course Requirements)

All degree candidates must:

1. File a plan of study outlining the intended areas of interest and approved by the program director.
2. Complete at least six courses (18 hours) from the electrical engineering (ELEC) areas of study below.
3. Complete four courses (12 hours) in technical or non-technical classes listed below. Other electives will be considered on a case-by-case basis with approval from the department head.

CORE COURSES

Computer Engineering

ELEC 635	Advanced Signal Processing
ELEC 645	Data Communications Networks
ELEC 655	Digital Communications
ELEC 675	Computer Architecture

Electrical Engineering

ELEC 605	Advanced Power Systems
ELEC 615	Spectral Analysis
ELEC 625	RF Systems
ELEC 650	Special Topics in Electrical Engineering
ELEC 665	Advanced Energy Systems Engineering
ELEC 685	Digital Control Systems

NON-TECHNICAL ELECTIVES (no more than 12 credit hours)

Business Administration

BADM 702	MBA Essentials I
BADM 703	MBA Essentials II
BADM 713	or LDRS 723 Communication for Leadership
BADM 716	Legal and Ethical Environment for Decision Makers
BADM 735	Ethical Leadership and Organizational Behavior

Engineering Leadership and Program Management

PMGT 650	Overview of Tech Project Management
PMGT 651	Technical Project Planning & Scheduling
PMGT 652	Applications in Quality Management
PMGT 653	Tech Project Support & Operations
PMGT 661	The Legal and Contractual Aspects of Program Management
PMGT 671	Project Manager Leadership Development
PMGT 672	Applied Leadership Concepts
PMGT 680	Systems Engineering Management Fundamentals
PMGT 681	Requirements Development and Management
PMGT 682	System Verification and Validation
PMGT 683	Systems Modeling and Integration
PMGT 684	Human System Integration
PMGT 685	Decision and Risk Analysis

Leadership

LDRS 711	Leading Change: Organization Development and Transformation
LDRS 712	Leading Teams: Coaching, Culture, Diversity, and Globalization
LDRS 713	Leadership Self-Appraisal, Development & Critical Thinking
LDRS 714	Strategic Leadership, Vision, Mission & Contemporary Issues

Requirements for Graduation: The degree of Master of Science in Electrical Engineering may be conferred upon those students who successfully complete the 30 hours of graduate coursework as specified above with a grade-point ratio (GPR) of 3.0 or better on hours earned at The Citadel. Completion of more than 30 credit hours of advanced graduate coursework will only be allowed for professional development, and may not be used to increase GPR to the 3.0 required for graduation.

Transfer Credit: A maximum of two courses (six credit hours) may be transferred in from a regionally accredited college or university, provided: (1) grades of “B” or better were received in the courses being considered, (2) credit was earned within six years prior to admission into The Citadel MSEE program, and (3) each course has been approved by the department head. A maximum of five courses (15 credit hours) may be transferred in from Clemson University, provided: (1) grades of “B” or better were received in the courses being considered, (2) credit was earned within six years prior to admission into The Citadel MSEE program, and (3) each course has been approved by the department head.

Course Availability: The courses will be offered based on student preferences and overall demand indicated in your plan of study to be submitted after acceptance. Students should be aware course offerings will be based on minimum class size enrollment. The Electrical and Computer Engineering Department will continually monitor student interest to expedite completion of your program of study.

Transfer Credit from The Citadel: A maximum of 12 hours may be transferred from one Citadel graduate degree program where appropriate, provided that core degree requirements are met.

Grading: All students are subject to the Academic Standards section under Policy Information of The Citadel Graduate College catalog.

Master of Science in Mechanical Engineering

Department of Mechanical Engineering

843-953-5057

www.citadel.edu/root/me-graduate-programs/master-of-science-mechanical-engineering

Dr. Robert J. Rabb, P.E.

rrabb@citadel.edu

Mission Statement

The mission of The Citadel's Master of Science in Mechanical Engineering program is to provide a student-centered learning environment focused on advanced applied engineering techniques and professional skills development for principled leaders in the engineering community through a rigorous curriculum, emphasizing practical engineering concepts, strong professional values, and a disciplined work ethic.

Admission Requirements

Applicants will be admitted to the Master of Science in Mechanical Engineering (MSME) degree program on the basis of professional and scholastic achievement, along with their aptitude for graduate study. Other qualities appropriate to graduate study are also considered. Anyone holding a bachelor's degree from an ABET accredited college or university is eligible for consideration. Other technical bachelor's degrees will be considered on a case-by-case basis.

Provisional Admission: Applicants may be admitted provisionally if their GPA does not meet minimum requirements. Students admitted provisionally are limited to take two mechanical engineering courses and must receive a grade of "B" or better in each engineering course to continue in the program.

All material must be received by the CGC office on or before the following dates to assure consideration to the MSME degree program during the applicable semester.

Admission Term:	Materials Due:
Fall	July 20
Spring	December 1
Summer	April 15

For degree-seeking students:

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of an official transcript of the baccalaureate degree from an ABET accredited engineering program or approved alternative.
3. Submission of official copy of Graduate Record Examination (GRE). Admission test must have been taken within the last five years.
4. Submission of two letters of recommendation.

For non-degree seeking professionals wanting to take graduate-level courses to fulfill professional practice requirements:

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of an official transcript of the baccalaureate degree from an ABET accredited engineering program or approved alternative.
3. Permission of department is required.

Program Requirements

The Master of Science in Mechanical Engineering is conferred upon those candidates who successfully complete an approved program of study consisting of 30 semester hours of graduate credit as delineated below.

Students are expected to complete all degree requirements within a six-year period from the time of registration in their first graduate course at The Citadel. Any transfer credit must have been earned within six years prior to admission into The Citadel MSME program. Any prerequisites for applicable courses must be met.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

Graduation Requirements (Course Requirements)

1. File a plan of study outlining the intended areas of interest and listing the top four corresponding courses of interest.
2. Complete at least six courses (18 hours) from the mechanical engineering areas of study below.
3. Complete four courses (12 hours) in technical or non-technical classes listed below. Other electives will be considered on a case-by-case basis with approval from the department head.

CORE COURSES

- **Composites Engineering**
 - MECH 604 Advanced Mechanics of Materials
 - MECH 605 Materials and Process Selection
 - MECH 606 Fatigue and Fracture
 - MECH 702 Theory of Elasticity
 - MECH 703 Theory of Plasticity
 - MECH 708 Mechanics of Composite Materials
- **Aeronautical Engineering**
 - MECH 631 Advanced Engineering Mathematics
 - MECH 611 Advanced Fluid Mechanics
 - MECH 670 Applied Aerodynamics
 - MECH 771 Compressible Flow
 - MECH 772 Computational Methods in Thermal Sciences

- **Manufacturing Engineering**
 - MECH 625 Computer-Aided Design and Analysis
 - MECH 635 Computer-Aided Design and Analysis Laboratory
 - MECH 640 Manufacturing Process and Design
 - MECH 645 Machine Design
 - MECH 660 Advanced Design
- **Power and Energy**
 - MECH 615 Applied Heat Transfer
 - MECH 617 Advanced Topics in Renewable Energy Systems
 - MECH 618 Energy Sources, Technology, and Policy
 - MECH 619 Power Systems Engineering
- **Mechatronics Engineering**
 - MECH 650 Modeling, Analysis, and Control Systems
 - MECH 655 Advanced Mechatronics
 - MECH 750 Introduction to Modern Control Engineering
 - MECH 755 Nonlinear Control Engineering

NON-TECHNICAL ELECTIVES

- **Business Administration**
 - BADM 702 MBA Essentials I
 - BADM 703 MBA Essentials II
 - BADM 713 or LDRS 723 Communication for Leadership
 - BADM 716 Legal and Ethical Environment for Decision Makers
 - BADM 735 Ethical Leadership and Organizational Behavior
- **Engineering Leadership and Program Management**
 - PMGT 650 Overview of Tech Project Management
 - PMGT 651 Technical Project Planning & Scheduling
 - PMGT 652 Applications in Quality Management
 - PMGT 653 Tech Project Support & Operations
 - PMGT 661 The Legal and Contractual Aspects of Program Management
 - PMGT 671 Project Manager Leadership Development
 - PMGT 672 Applied Leadership Concepts
- **Leadership**
 - LDRS 710 Ethics, Values and Principled Leadership
 - LDRS 711 Leading Change: Organization Development and Transformation
 - LDRS 712 Leading Teams: Coaching, Culture, Diversity, and Globalization
 - LDRS 714 Strategic Leadership, Vision, Mission and Contemporary Issues
 - LDRS 722 Leadership in Organizations

Course / Certificate Availability: The courses / certificates will be offered based on student preferences/ overall demand indicated in your plan of study to be submitted after acceptance. Students should be aware course / certificate offerings will be based on minimum class size enrollment. The Mechanical Engineering Program will continually monitor student interest to expedite completion of your program of study.


*Students who have been admitted to the MSME with an approved focus area (Composites, Aeronautical, Manufacturing, Power and Energy, or Mechatronics) need to apply for the respective Engineering Graduate Certificate (application fee will not be required for those already admitted to the MSME program).

Transfer Credit from The Citadel: A maximum of 12 hours may be transferred from one Citadel graduate degree program where appropriate, provided that core degree requirements are met.

Grading: All students are subject to the Academic Standards section under Policy Information of The Citadel Graduate College catalog.

Requirements for Graduation: The degree of Master of Science in Mechanical Engineering may be conferred upon those students who successfully complete the 30 hours of graduate coursework as specified above with a grade-point ratio (GPR) of 3.0 or better on hours earned at The Citadel. Completion of more than 30 credit hours of advanced graduate coursework will only be allowed for professional development, and may not be used to increase GPR to the 3.0 required for graduation.

Transfer Credit: A maximum of two courses (six credit hours) may be transferred in from a regionally accredited college or university, provided: (1) grades of “B” or better were received in the courses being considered, (2) credit was earned within six years prior to admission into The Citadel MSME program, and (3) each course has been approved by the department head. A maximum of five courses (15 credit hours) may be transferred in from Clemson University, provided: (1) grades of “B” or better were received in the courses being considered, (2) credit was earned within six years prior to admission into The Citadel MSME program, and (3) each course has been approved by the department head.



SCHOOL OF
HUMANITIES AND
SOCIAL SCIENCE

MASTER OF ARTS

- ENGLISH
- HISTORY
- INTELLIGENCE AND SECURITY STUDIES
- INTERNATIONAL POLITICS AND MILITARY AFFAIRS
- MILITARY HISTORY
- SOCIAL SCIENCE
- PSYCHOLOGY:
CLINICAL
COUNSELING
- SPECIALIST IN
EDUCATION IN
SCHOOL
PSYCHOLOGY

Master of Arts in English

Department of English

843-953-5068

www.citadel.edu/root/english

Dr. James M. Hutchisson, hutchissonj@citadel.edu

Mission Statement

The Citadel and the College of Charleston offer a joint Master of Arts degree in English. The 36 hour program, with a thesis option, provides advanced course work in British literature, American literature, English language, and composition and rhetoric. The program is designed to attract qualified holders of the baccalaureate degree, whether recent college graduates, English teachers, or others interested in pursuing graduate studies in English. A Joint Program Committee, comprised of faculty members from each institution, oversees admissions, course scheduling, comprehensive examinations, degree certification, and other matters related to the management of the program. Diplomas and other official documents indicate that the program is a joint endeavor and include the names of both institutions.

Admission Requirements

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of an official transcript reflecting the highest degree earned from a regionally accredited college or university.
3. Applicants are expected to have a cumulative undergraduate grade point average of at least 2.5 and 3.0 in the major.
4. Submission official Graduate Record Examination (GRE) or the Miller Analogies Test (MAT) score. (Applicants who do not have an undergraduate degree in English are also required to take the GRE advanced test in literature.) Applicants are expected to have a composite GRE verbal and quantitative score of at least 300 and a 4 on the writing assessment section. Those taking the MAT should have a score of at least 400. * Admission test must have been taken within the last five years.
5. Submission of at least two signed letters of recommendation, preferably from former professors. Each reference should be as specific as possible in addressing the applicant's academic ability, motivation, and ability to complete a graduate degree.
6. Submission of a two-page statement about educational goals and interest in a graduate program in English.
7. Submission of a writing sample that demonstrates an ability to perform literary analysis and conduct research. Typically this requirement can be met by submitting a research paper prepared for an advanced undergraduate English course.

*An applicant who does not meet the minimum GPA and/ or test score expectations or who does not have sufficient undergraduate background in English may be allowed to pursue course work as a provisional student. Upon completing

nine semester hours with a minimum GPA of 3.25 the student will be eligible for degree-seeking status.

Application Deadlines

The Joint Program Committee will consider completed applications for the regular degree program on the following dates:

Admission Term:	Materials Due:
Fall	May 1st
Spring	November 1st
Summer	April 1st

Applications will be considered year round for non-degree students.

Program Requirements

The Master of Arts is conferred upon those candidates who successfully complete an approved program of study consisting of at least 36 semester hours of graduate credit with a cumulative GPA of 3.0. Specific requirements are listed below:

Thesis Option:

- British Literature before 1800, three hours
- British Literature after 1800, three hours
- American Literature, three hours
- Seminar (English 700, 703, 704 or 705), three hours
- English 511 (Intro to Graduate English Studies), three hours
- Electives, eighteen hours
- Thesis and Oral Defense of Thesis, six hours
- Final Portfolio

Non-thesis Option:

Same as above, except that the thesis is omitted and the number of elective hours is twenty-four.

Notes:

- At least twelve hours must be taken at each campus.
- English 700, 703, 704, and 705 can each satisfy the seminar requirement and may also be used to satisfy a core requirement in British or American literature, depending on the topic.
- Electives will normally be graduate courses in English. Other courses will be considered on a case-by-case basis by the Joint Program Committee.
- No more than nine hours of English 698 (three), 699 (three), and 701 (six) in any combination may count toward the required 36 hours.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

COURSES

ENGL-500	Old and Middle English Literature
ENGL-501	Chaucer
ENGL-502	Shakespeare
ENGL-504	Poetry and Prose of the English Renaissance
ENGL-505	Milton

ENGL-506 Restoration and Eighteenth Century Drama
 ENGL-507 Poetry and Prose of the Restoration and Eighteenth Century
 ENGL-509 Romantic Literature
 ENGL-510 Victorian Literature
 ENGL-511 Introduction to Graduate Studies in English. Co-requisite for all entering students.
 ENGL-512 Southern Literature
 ENGL-517, 518 Special Topics in Literature
 ENGL-520 A Survey of World Literature I
 ENGL-521 A Survey of World Literature II
 ENGL-522 Colonial and Revolutionary American Literature
 ENGL-523 Nineteenth-Century American Literature I—Romanticism
 ENGL-524 Nineteenth-Century American Literature II—Realism
 ENGL-525 Eighteenth Century British Novel
 ENGL-526 Victorian Novel
 ENGL-527 British Fiction: 1900 to 1945
 ENGL-528 American Fiction: 1900 to 1945
 ENGL-529 American Fiction: 1945 to the Present
 ENGL-531 British Poetry: 1900 to Present
 ENGL-532 American Poetry: 1900 to Present
 ENGL-533 British Drama: 1900 to Present
 ENGL-534 American Drama: 1900 to Present
 ENGL-535 African American Literature
 ENGL-537 Contemporary British Fiction
 ENGL-550, 551 Special Topics in Composition or Language
 ENGL-552 Adolescent Literature
 ENGL-553 Modern English Grammar
 ENGL-554 History of the English Language
 ENGL-555 Literary Criticism
 ENGL-556 Theory and Practice of Teaching Composition
 ENGL-558 Technical and Professional Writing
 ENGL-559 History and Theory of Rhetoric
 ENGL-560 Film Studies
 ENGL-562 Workshop in Advanced Composition
 ENGL-564 Teaching with Technology
 ENGL-573 Special Topics in African American Literature
 ENGL-574 Special Topic in English Literature Before 1800
 ENGL-575 Special Topics in English Literature After 1800
 ENGL-576 Special Topics in American Literature
 ENGL-595 Methods and Materials for English Language Arts
 ENGL-698 Tutorial
 ENGL-699 Independent Study
 ENGL-700 Seminar
 ENGL-701 Thesis
 ENGL-702 Internship
 ENGL-703 Seminar in English Literature Before 1800
 ENGL-704 Seminar in English Literature After 1800
 ENGL-705 Seminar in American Literature

Descriptions of courses are listed in the last section of this catalog.

Master of Arts in History

Department of History

843-953-5073

www.citadel.edu/root/history-masters-program

Dr. Keith Knapp, Director knappk@citadel.edu

Mission Statement

The Citadel and the College of Charleston offer a joint Master of Arts Degree in History, providing each student with advanced specialized work in one of the following areas: United States history, European history, or Asian/African/ Latin American history. The program has a special emphasis on the history of the American South, the South Carolina Lowcountry, and the Atlantic World. The program serves the needs of those interested in pursuing graduate studies in history. Teachers who complete the program have a greater command of the literature of a particular field. Others are prepared to do doctoral work or pursue other advanced degrees, enter the field of public history, or seek employment opportunities which require advanced training in the humanities. The management of the program is vested in a Joint Program Committee composed of representatives of the two history departments. The directorship rotates between the two institutions. Diplomas and other documents will indicate that the program is a joint endeavor and will include the names of both institutions.

Admission Requirements

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of an official transcript reflecting the highest degree earned from a regionally accredited college or university.
3. Submission of official copy of the Graduate Record Examination (GRE) score. Applicants are expected to have a GRE verbal score exceeding 152. Admission test must have been taken within the last five years.
4. Applicants are expected to have a cumulative undergraduate grade point average of at least 2.5 and a 3.0 in the major. They are also expected to have 15 hours of history course work beyond the initial survey.*
5. Submission of three signed letters of recommendation, normally from former professors. Each reference should be as specific as possible in analyzing the applicant's potential for success in the program. References should address the student's ability to design, conduct, and present research without direct supervision, the ability to analyze complex data and issues, and the ability to write effectively.
6. Submission of evidence of ability to conduct research and present findings. A term paper, honors thesis, or critical essay from a graduate or upper-level course taken in college will suffice. The evidence of writing should reflect the ability to

conceptualize a research theme, conduct research to support an argument, and reach a justified conclusion. The paper should demonstrate an ability to handle documentation of evidence.

*An applicant who fails to meet the GPA and course history requirements may be allowed to pursue course work as a provisional student only upon application to the Joint Program Committee. Upon completion of nine semester hours, with no more than three hours in independent study (HIST-770) and a minimum GPA of 3.25, the student may be admitted unconditionally. The student must make this request in writing to the Joint Program Committee. There is no guarantee that courses taken in a non-degree status will be credited towards a degree once a student gains provisional or regular admission. Coursework taken to meet admission prerequisites will not count towards degree requirements.

Application Deadlines

The Admissions Committee will consider complete applications for the program on the following dates:

Admission Term:	Materials Due:
Fall and Summer	March 1st
Spring	October 1st

Program Requirements

In consultation with an advisor, each degree candidate will develop a plan of study which includes course work at both institutions. The plan of study must be submitted to the Program Director upon completion of the first six hours or the first semester of graduate work.

In addition to lectures and examinations, graduate courses demand wide reading, thorough research, and advanced historical writing. Only graduate students admitted to the M.A. program will be automatically enrolled, but non-degree students and exceptional undergraduates—upper division majors in history and related disciplines—may be enrolled in 500-level courses. For this, however, they will need permission from the instructor and are expected to have a minimum GPA of 3.4 in history courses. No more than two 500-level courses may be taken by an undergraduate. 600- and 700-level courses are for M.A. program students exclusively. Work expected of juniors and seniors will not be as great as that expected of the graduate students. The qualitative expectations remain the same for all students.

The Master of Arts in History is conferred upon those candidates who successfully complete an approved program of study consisting of a minimum of 33 semester hours of graduate credit with a cumulative GPA of 3.0. Twelve credit hours must be taken at the College of Charleston.

The distribution of courses follows this general scheme:

- Major area: 18 hours
- Minor area: 6 hours
- Historiography: 3 hours
- Third area: 3 hours*
- Electives: 3 hours**

*All students must take at least three hours in each area offered by the program (US, Europe, World).

**In history or a related discipline in the humanities or social sciences. Students must obtain prior approval from their campus program director to take a non-history elective. A specific number of courses must be distributed between both institutions.

The program offers two tracks, according to students' career goals:

1. Thesis track students must take one research seminar, HIST-801 and HIST-802, and successfully defend their thesis.
2. Non-thesis track students must take one research seminar, preferably within their area of concentration, and a comprehensive exam in two distinct areas.

All students are encouraged to attain proficiency in a foreign language. There is no formal requirement for all students in the program to demonstrate language proficiency at a certain level. However, depending upon the program, a candidate may be required by the advisor to demonstrate mastery of an appropriate foreign language, indicated by the satisfactory use of source material or literature in the relevant foreign language in seminar or research work.

African American Studies Emphasis

Students who elect this option must meet all the normal requirements by the master's degree. In addition, they must complete one of the two courses of study below and all courses must meet the approval of the graduate program director.

Thesis Option:

- 6 hours in African American oriented history
- 3 approved hours in another discipline
- 6 hours in an African American oriented thesis

Non-Thesis Option:

- 9 hours in African American oriented history
- 3 approved hours in another discipline
- 3 hours in African American oriented independent study or similar (i.e., research seminar)

Three hours of independent study on an African American topic may be included as part of the nine hours of course work.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

COURSES

(Non-degree, MAT, and exceptional undergraduate students may enroll in 500 level courses only, space permitting.)

HIST-502	Colonial America and the American Revolution to 1789
HIST-504	Civil War and Reconstruction
HIST-506	The U.S. in the Twentieth Century
HIST-521	The American South
HIST-522	South Carolina History
HIST-523	Afro-American History
HIST-532	Ancient Greece
HIST-533	Ancient Rome
HIST-535	Medieval Europe
HIST-537	Renaissance and Reformation
HIST-541	Enlightenment and French Revolution
HIST-542	Nineteenth-Century Europe
HIST-543	Twentieth-Century Europe
HIST-545	History of Modern Russia
HIST-551	Women in the Western World
HIST-562	Colonial Latin America
HIST-563	Modern Latin America
HIST-572	Precolonial Africa
HIST-573	Modern Africa
HIST-577	Modern Middle East
HIST-582	China to 1800
HIST-583	Modern China
HIST-586	Japan to 1800
HIST-587	Modern Japan
HIST-590	Special Topics in U.S. History
HIST-591	Special Topics in European History
HIST-592	Special Topics in Latin American Asian/African History
HIST-593	Special Topics in Peace, War, and Diplomacy
HIST-610	Special Topics in U.S. History
HIST-620	Special Topics in Lowcountry Studies
HIST-630	Special Topics in Peace, War, and Diplomacy
HIST-640	Special Topics in European History
HIST-650	Special Topics in British History
HIST-670	Special Topics in Asian/African/ Latin American
HIST-691	Historiography
HIST-710	Research Seminar in U.S. History
HIST-720	Research Seminar in Lowcountry Studies
HIST-740	Research Seminar in European History
HIST-760	Research Seminar in Asian/ African/ Latin American History
HIST-770	Independent Study in History
HIST-801-802	Master's Thesis

Descriptions of courses are listed in the last section of this catalog.

Public History Concentration

Students opting to add a concentration in Public History must meet all the normal requirements for the master's degree. In fulfilling these requirements, they must complete the course of study below and all courses chosen must meet the approval of the graduate program director.

Program Requirements:

- 33 hours
- Comprehensive exam or thesis
- 12 hours at the College of Charleston

Program of Study

- 3 hours in Introduction in Public History
- 3 hours in Internship Experience
- 6 hours in approved Public History coursework (may be Interdisciplinary)
- 6 hours in Public History oriented thesis

COURSES

HIST-525	Introduction to Public History	3
HIST-750	Internship Experience	3

Students enrolled in the Public History Concentration must complete a public history-oriented thesis. (6 hours)

HIST-801	Master's Thesis	3
HIST-802	Master's Thesis	3

Electives (6 hours)

Two electives will be required for students enrolled in Public History concentration.

HSPV-807	American Architecture	3
HSPV-808	History and Theory of Historic Preservation	3
HSPV-809	Historical Research Methods	3
HSPV-821	Historic Preservation and Public Memory	3
HSPV-823	Historic American Interiors	3
HSPV-833	Cultural and Historical Landscape Preservation	3
HIST-590	Special Topics in US History*	3

*Content in these courses must relate to public history and is subject to approval by the public history coordinator.

Master of Arts in Intelligence and Security Studies

Department of Intelligence and Security Studies

843-953-6886

<http://www.citadel.edu/root/intelligence-and-security-studies-graduate-programs/master-of-arts>

Dr. Carl Jensen, cjensen1@citadel.edu

Mission Statement

The Master of Arts (MA) degree program in Intelligence and Security Studies (ISS) prepares students to enhance national security through intelligence and homeland security leadership. Best practices for intelligence collection and analysis and national security combined with current theory, research, and experience give students the background necessary to cultivate critical thinking, concise writing, and effective briefing. By introducing applicable management principles and policy analysis, the program fosters the leadership skills to successfully address security and intelligence challenges facing the United States.

Unlike traditional graduate programs that take a theoretical and conceptual track in preparing students for further academic research, The Citadel's ISS program combines theory and practice to provide the real-world skills necessary to enter and advance in the public and private intelligence arenas.

This program is entirely online to provide maximum flexibility for students, and at the same time allow the ISS program to attract instruction from intelligence professionals located around the world.

By combining current theory, research, and experience, the program offers an intellectually rigorous course of study that emphasizes key skills related to analytical writing and research, critical thinking, and general international and domestic subject matter expertise. In addition, the master's program offers two concentrations, both of which lead to a certificate in addition to the MA degree. The courses in both of these concentrations count as electives for the MA degree in Intelligence and Security Studies.

- The Cybersecurity concentration is offered jointly by The Citadel's Department of Cyber and Computer Sciences and the Department of Computer Science at the College of Charleston;
- The Leadership concentration is offered by the Department of Leadership Studies.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500
- Intelligence and Security Studies Student Portfolio and oral evaluation.

Admission Requirements

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of official transcripts from all previously attended colleges and universities. Students must be able to demonstrate an earned undergraduate degree from a regionally accredited institution with a competitive grade point average.
3. Submission of a writing sample that demonstrates strong critical thinking and communication skills. Typically this can be met by submitting a research paper prepared for an advanced undergraduate or graduate course.
4. Submission of official scores from a valid (within five years) Millers Analogies Test (MAT) or Graduate Record Examination (GRE). This requirement may be waived for students who are non-residents of the United States or who already hold a graduate degree.
5. Resume
6. Students who wish to enroll in the cybersecurity concentration must meet additional admissions requirements as established by the Department of Cyber and Computer Sciences.

Application Deadlines

The Admissions Committee will consider complete applications for the program on the following dates:

Admission Term:	Materials Due:
Summer	April 15
Fall	July 15
Spring	November 29

Program Requirements

Required Core Courses (12 credit hours):

CRMJ-568/INTL-568/PSCI-568—International and Domestic Terrorism

INTL-570 – Homeland Security

INTL-580 – Introduction to Intelligence

INTL-581 – Intelligence Research and Analysis

Degree Electives: Foundation Courses (8 electives/24 credit hours required from this list -OR- 4 electives/12 credit hours required from this list for Cybersecurity concentration students-OR- 3 electives/9 credit hours required from this list for Leadership concentration students):

LDRS 722 – Leadership in Organizations

CRMJ-501/PSCI-501 – Research Methods in Social Science

CRMJ-510 – Topics in Criminal Justice

CRMJ-515/INTL-515/PSCI-515 – Topics in Homeland Security

CRMJ-555/PSCI-555 – Leadership Application Course in Criminal Justice

CRMJ-562 – Comparative Criminal Justice Systems

CRMJ-583 – Transnational Organized Crime

HIST-591 – Special Topics in European History

INTL-560 – Intelligence and Homeland Security Administration

INTL-569/PSCI-569 – National Security Policy

INTL-572 – Legal and Ethical Dimensions of Intelligence and Homeland Security

INTL-582 – Intelligence Theory Application
INTL-585 – Topics in Intelligence
INTL-600 – Intelligence Internship
INTL-601 – Homeland Security Internship
LDRS-750 – Evolution of Military Leadership Thought
LDRS-751 – Survey of US Military Leaders
LDRS-752 – Survey of World Military Leaders
LDRS-753 – Strategic & Contemporary Military Leadership Issues
PSCI-564 – US Foreign Relations
PSCI-565 – International Politics
PSCI-566 – International Political Economy
PSCI-571 – Comparative Politics
PSCI-572 – International Organization
PSCI-573 – International Political Theory
PSCI-575 – US Foreign Policy Leadership
PSCI-576 – International Law

Cybersecurity Concentration (12 credit hours)

CSCI-614 – Advanced Operating Systems
CSCI-631 – Principles of Computer Security
CSCI-632 – Data Communications and Network
CSCI-641 – Advanced Cybersecurity

Leadership Concentration (5 required courses/15 credit hours
required for Leadership concentration students only)

Leadership Concentration (15 credit hours)

Required Courses (6 credit hours)

LDRS-722 – Leadership in Organizations
PSYC-570 – Social and Cognitive Foundations of Interpersonal
Behavior

Leadership Electives (6 credit hours)

Choose two (2) of the following:

LDRS 710 – Ethics, Values, & Principled Leadership*
LDRS 711 – Leading Change: Organization Development and
Transformation*
LDRS 712 – Leading Teams: Coaching, Culture, Diversity, and
Globalization*
LDRS 723 or BADM 713 – Communications for Leadership
PSYC 500 – Human Growth and Development

Application of Leadership (3 credit hours)

Choose one (1) of the following:

LDRS-710 – Ethics, Values, and Principled Leadership
LDRS-711 – Leading Change: Organization Development and
Transformation*
LDRS-714 – Strategic Leadership, Vision, Mission, and com
LDRS-723 or BADM 713 – Communications for Leadership

*LDRS-722 is a prerequisite for these courses.

Total Required Courses: 36 credit hours

Descriptions of courses are listed in the last section of this catalog.

Master of Arts in International Politics and Military Affairs

Department of Political Science
843-953-5069

www.citadel.edu/root/international-politics-military-affairs

Dr. Sarah Tenney Sharman: tenneys1@citadel.edu

Mission Statement

The Master of Arts in International Politics and Military Affairs at The Citadel is designed to meet the needs of the US military and federal governmental agencies as well as international governmental and non-governmental organizations, multinational business enterprises, and others interested in gaining greater knowledge about the field of international politics.

This program is designed to prepare international affairs professionals who wish to gain a broad understanding of the increasingly complex political, economic, and social issues that transcend national boundaries. It offers students an opportunity to expand their knowledge of the theoretical and policy issues affected by international politics and culture, the ideas and values that influence the behavior of state and non-state actors, and the leadership principles needed to wrestle with everyday political and organizational life. It is designed to help students hone the critical thinking, analytical, leadership, and communication skills needed to successfully foster transnational relationships in an increasingly globalized environment.

Unlike 'traditional' graduate programs that tend to take a highly theoretical and conceptual track in preparing students for further academic research, The Citadel's master's program would take a 'nuts-and-bolts' approach to develop international affairs professionals with the practical skills needed to pursue careers as military officers, policy analysts, foreign service officers, international civil servants, and business leaders as well as positions related to economic development, nation building, and humanitarian affairs.

Admission Requirements

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of an official transcript of the baccalaureate degree or the highest degree earned from a regionally accredited college or university.
3. Provide a written statement of purpose setting forth your intentions, goals, and preparation for graduate study.
4. All applicants must successfully complete either the Graduate Record Examination (GRE) or the Miller Analogies Test (MAT).
5. Provide at least two academic letters of recommendation that address the student's ability to undertake coursework at the graduate level.
6. All non-native English speakers must complete the TOEFL exam.

The minimum for the GRE is a verbal and quantitative combination of 290. The minimum for the MAT is a score of 396. Students who score between 283-289 on the GRE or 380-395 on the MAT may apply for provisional status. Upon completion of the first six hours of degree coursework, with a minimum GPA of 3.50, the student will be fully admitted. Admission tests must be current within five (5) years of application, and official scores must be sent directly to the CGC office at the request of the student.

Admission to the Master of Arts in International Politics and Military Affairs program is a competitive process. The college has a right and responsibility to accept the best qualified persons, taking into account candidates' scholastic and professional achievement along with their aptitude for graduate study and experience.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

Program Requirements

Required Core (two classes, three hours each)

PSCI-500 Seminar in Social Science
PSCI-501 Research Methods in Social Science

*NOTE: These six hours must be included in the first 12 hours taken in the program.

Electives (10 classes, three hours each)

CRMJ 581 / INTL 581 Intelligence Research and Analysis
LDRS 712 Leading Teams, Coaching, Culture, Diversity and Globalization

PSCI 510 Special Topics in Political Science *
PSCI 562 East Asian Affairs
PSCI 563 South Asian Affairs
PSCI 564 US Foreign Policy
PSCI 565 International Politics
PSCI 566 International Political Economy
PSCI 567 Global Democracy
PSCI 569 National Security Policy
PSCI 571 Comparative Politics
PSCI 572 International Organization
PSCI 573 Politics of Economic Development
PSCI 574 Global Issues
PSCI 575 US Foreign Policy Leadership
PSCI 576 International Law
PSCI 577 Conflict Studies
PSCI 592 International Political Theory

*Must be pre-approved by the degree program director

Total: Thirty-six (36) hours

Descriptions of courses are listed in the last section of this catalog.

In addition to the course requirements, the program offers two tracks, according to students' career goals:

1. Thesis track - students must submit a thesis presenting original research on a topic in the field.
2. Non-thesis track - students must complete a guided internship within their area of concentration and present a reflection paper on their experience.

Master of Arts in Military History

Department of History

843-953-5073

www.citadel.edu/military-history

Dr. David Preston, Program Director

prestond1@citadel.edu

Mission Statement

The Citadel's online Master of Arts in Military History provides advanced historical study of the theory and practice of warfare, the institutions and operations of military forces, and the impact of militaries and warfare on societies. The degree equips graduates with a holistic understanding of the history and evolution of warfare—from the strategic to the operational and tactical levels. The Citadel's History Department and affiliated fellows bring together award-winning and experienced scholars in the fields of war studies and military history. The M.A. in Military History advances The Citadel's central institutional mission of educating and commissioning officers into the United States Armed Forces. The degree is designed to provide for the continuing educational needs of military officers; government officials in the fields of diplomacy, national defense, homeland security, and intelligence; public historians; corporate and business leaders; and public school teachers. Graduates will be equipped to utilize military history in analysis, operations, research, writing, and teaching within the U.S. Armed Forces, the federal government, public history, public education, and the private sector.

Admission Requirements

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of official transcripts from all degrees earned from previous colleges or universities. Students must be able to demonstrate an earned undergraduate degree from a regionally accredited institution with a competitive grade point average. Applicants are expected to have a cumulative undergraduate GPA of at least 2.5 and at least a 3.0 in the major. Students who fail to meet the minimum score requirement may be provisionally accepted into the MA degree program provided all other admission requirements have been met. Upon completion of the first nine hours of degree coursework, with a minimum GPA of 3.50, the student is considered fully admitted.
3. Submission of official scores from a valid (within five years) Millers Analogies Test (MAT) or Graduate Record Examination (GRE). This requirement may be waived for students who already hold a graduate degree. If waived, the applicant must submit a graduate-level writing sample in lieu of submitting the test score.
4. Submission of one letter of recommendation, ideally from a former professor. A recommendation from a

commanding officer or employer will be accepted. The letter should be as specific as possible in analyzing the applicant's writing, research, and analytical skills and potential for success in the program.

5. Resume or C.V.

Program Requirements

In consultation with an advisor, each degree candidate will develop a course of study, define a particular track for completion of the Capstone Experience, and establish a potential field or topic of interest if the student is writing a master's thesis. Students pursuing a master's thesis are encouraged to begin research and discussion with their advisor at an early date.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

The distribution of course requirements follows this general scheme:

- Introduction to Military History (2 courses/6 hours)
- Foundations in Military History (3 courses/9 hours)
- Conflict Studies (2 courses/6 hours)
- War and Society (1 course/3 hours)
- Capstone Experience (2 courses/6 hours)

The program offers three tracks for fulfillment of the Capstone Experience, according to each student's goals:

1. **Thesis track** students must take MLTH 601 and 602 (Master's Thesis) and defend their thesis in a committee of three professors. This track enables students to produce a deeply researched piece of historical scholarship and to pursue publication.
2. **Non-thesis track** students must take MLTH 600 (Capstone Seminar) and one additional War and Society course (MLTH 550 or higher).
3. **Certificate in Military Leadership** students must take MLTH 600 (Capstone Seminar) and one of the following courses in the Leadership Studies department: Either LDRS 753: Strategy and Contemporary Military Leadership Issues - or- LDRS 711: Leading Change: Organization Development and Transformation. In addition, students must complete in their normal course of study MLTH 502 (Leadership in the Crucible of War), MLTH 503 (U.S. Military History), and MLTH 504 (Non-Western Military History) to receive the Certificate in Military Leadership.

All students are encouraged to attain proficiency in a foreign language. There is no formal requirement for all students in the program to demonstrate language proficiency at a certain level. However, depending upon the course of study, a candidate may be required by the advisor to demonstrate mastery of an appropriate foreign language, indicated by the satisfactory use of source material or literature in the relevant foreign language in seminar or research work.

Courses

Introduction to Military History

MLTH-500 Methods and the Historiography of Military History

MLTH-501 Strategic Thinkers and Military Intellectuals

Foundations in Military History

MLTH-502 Leadership in the Crucible of War

MLTH-503 U.S. Military History

MLTH-504 Non-Western Military History

MLTH-505 Irregular Warfare

MLTH-506 Naval and Amphibious Warfare

MLTH-507 Airpower History

Conflict Studies

MLTH-511 Greco-Roman Warfare

MLTH-512 Hundred Years' War

MLTH-513 French and Indian War (Global Seven Years' War)

MLTH-514 The American Revolution

MLTH-515 Napoleonic Wars

MLTH-516 American Civil War

MLTH-517 American Indian Wars

MLTH-518 World War I

MLTH-519 World War II in Europe and the Mediterranean

MLTH-520 World War II in the Pacific

MLTH-521 The Resistance in World War II

MLTH-522 The Red Army

MLTH-523 The Vietnam War

MLTH-524 The Global Cold War

MLTH-525 Global War on Terrorism

MLTH-526 Arab-Israeli Conflict

MLTH-530 Special Topics in Conflict Studies

War and Society

MLTH-550 History of War and Society in China

MLTH-551 The Samurai and the Japanese Military Tradition

MLTH-552 The Viking Military Tradition

MLTH-553 King Alfred's Wars

MLTH-554 War and Society in Early Modern Europe, 1350-1650

MLTH-555 The Dutch Revolt

MLTH-556 War and Society in the Age of Total War

MLTH-557 The Double-V Campaign: African-Americans in World War II

MLTH-558 Social Movements in the Vietnam Era

MLTH-559 The Modern Middle East

MLTH-560 Military Coups and Dictators in Latin America

MLTH-561 History of the U.S./ Mexico Borderland

MLTH-565 Special Topics in War and Society

Capstone Experience

MLTH-600 Capstone Seminar

MLTH-601-602 Master's Thesis

TOTAL PROGRAM REQUIREMENTS: 30 Credit Hours

Descriptions of courses are listed in the last section of this catalog.

Master of Arts in Social Science

Department of Political Science

843-953-5069

www.citadel.edu/root/mass

Dr. Terry Mays: terry.mays@citadel.edu

Mission Statement

The degree is designed to allow students to advance their knowledge of the social sciences through an interdisciplinary study of political science, criminal justice, sociology, anthropology, psychology, leadership, and related disciplines.

This program offers students the opportunity to acquire a broad interdisciplinary background in the social sciences and includes a familiarization with the perspectives, processes, and methods used in the study of social phenomena. Designed for students and professionals from all walks of life, the program allows one to tailor the emphasis of the course of study to fit a variety of individual and career interests.

Admission Requirements

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of an official transcript reflecting the highest degree earned from a regionally accredited college or university.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

Program of Study

The Master of Arts in Social Science (MASS) is a 36 credit hour program consisting of the following requirements:

REQUIRED CORE COURSES (six hours)

PSCI-500/ CRMJ-500 Seminar in Social Science *

PSCI-501/ CRMJ-501 Research Methods in Social Science *

*NOTE: these six hours must be included in the first 12 hours taken in the program.

CLUSTER A: FOUNDATION COURSES (15 hours)

Students should select five courses from the political science, criminal justice, intelligence, sociology, or anthropology courses the School of Humanities and Social Science offers and are listed in the Cluster A box.

PSCI-502 The American Federal System

PSCI-503 The Politics of American Democracy: Political Behavior, Interest Groups, and Political Parties

PSCI-506 Legislative Process

PSCI-507 American Presidency

PSCI-509	Urban Politics
PSCI-510	Topics in Political Science
PSCI-521	Advanced Placement: American Government
PSCI-555	Topics in Political Science Leadership Application
PSCI-561	Law and Legal Process
PSCI-564	U.S. Foreign Relations
PSCI-565	International Politics
PSCI-566	International Political Economy
PSCI-567	Global Democracy
PSCI-568	International and Domestic Terrorism
PSCI-569/CRMJ-569	National Security Policy
PSCI-570	The Civil Rights Movement
PSCI-571	Comparative Politics
PSCI-572	International Organization
PSCI-573	International Political Theory
PSCI-574	Global Issues
PSCI-575	US Foreign Policy Leadership
PSCI-576	International Law
PSCI-577	Conflict Studies
PSCI-662	Constitutional Law: Civil Rights and Liberties
CRMJ-510	Topics in Criminal Justice
CRMJ-515/PSCI-515	Topics in Homeland Security
CRMJ-555	Leadership Application Course in Criminal Justice
CRMJ-560	Homeland Security and Criminal Justice Administration
CRMJ-561	Drugs and Crime
CRMJ-562	Comparative Criminal Justice Systems
CRMJ-563	Criminal Evidence
CRMJ-564	Juvenile Justice
CRMJ-565	Corrections
CRMJ-568/PSCI-568	International and Domestic Terrorism
CRMJ-570	Homeland Security
CRMJ-572	Ethics and Integrity in Homeland Security
CRMJ-581	Intelligence Research and Analysis
CRMJ-582	Intelligence Theory Application
CRMJ-583	Transnational Organized Crime
CRMJ-585	Topics in Intelligence
INTL-560	Intelligence and Homeland Security Administration
INTL-570	Homeland Security
INTL-572	Legal and Ethical Dimensions of Intelligence and Homeland Security
INTL-580	Introduction to Intelligence
INTL-581	Intelligence Research and Analysis
INTL-582	Intelligence Theory Application
INTL-585	Topics in Intelligence
SOCI-501	Social Determinants of Modern Life
ANTH-501	Physical and Cultural Adaptations
ANTH-505	Special Topics in Anthropology

CLUSTER B: ELECTIVE COURSES (15 hours)

Students should select five courses from those listed in this cluster, three of which must be Psychology graduate courses (9 hours). Options for the other two electives are listed below.

PSYC-500 Human Growth and Development

*PSYC-501 Principles of Cognitive & Behavioral Change

*PSYC-507 General Psychopathology

*PSYC-508 Counseling and Personality Theories

PSYC-553	Introduction to Family Dynamics
*PSYC-555	Special Topics in Psychology
*PSYC-561	Cultural Issues in Psychological Practice
PSYC-570	Social and Cognitive Foundations of Interpersonal Behavior *With Instructor Permission Only
BADM-704	Foundations of Economics
BADM-713/LDRS-723	Communication for Leadership
EDUC-500	Foundations of American Education
EDUC-561	Counseling Diverse Populations
EDUC-600	Professional Negotiations
ENGL-512	Southern Literature
ENGL-520	Survey of World Literature I
ENGL-521	Survey of World Literature II
ENGL-535	African-American Literature
ENGL-558	Technical and Professional Writing
GEOG-511	World Geography

Any 500 level History course EXCEPT:

HIST-560	History of Non-Western World (MAT only)
HIST-594	Historiography for Social Science Teachers (MAT only)

HESS-502	Drug and Substance Abuse
HESS-503	Human Sexuality
HESS-504	Public Health
LDRS-712	Leading Teams: Coaching, Culture, Diversity, and Globalization
LDRS-714	Strategic Leadership, Vision, Mission and Contemporary Issues

Total: Thirty six (36) hours

Descriptions of courses are listed in the last section of this catalog.

Online Completion of the MASS Degree

It is possible to complete the MASS degree partially or entirely online. Students wanting to complete the entire MASS degree online should do the following:

1. Complete the core courses (PSCI/CRMJ 500 and CRMJ 501) online.
2. Complete five PSCI, CRMJ, INTL, ANTH, or SOCI online courses for the Cluster A.
3. Complete three PSYC online courses and two of the approved online courses in the other departments for the Cluster B or the online courses for the simultaneous graduate certificate in Leadership as discussed in the Graduate Certificate in Leadership option in the previous section.

Online courses offered each semester or summer term are listed in the CGC schedule of courses. It is important to coordinate online course selection with the MASS adviser before enrolling each term to ensure remaining on schedule for graduation.

MASS with Graduate Certificates in Leadership and/or Intelligence Analysis

Students accepted for the MASS degree program may enroll in the Graduate Certificate in Leadership and/or the Graduate Certificate in Intelligence Analysis.

Each certificate involves a separate application and acceptance. Students dual enrolled in the MASS degree and Graduate Certificate in Leadership may apply the five required courses for the certificate as the Cluster B of the MASS degree. Students dual enrolled in the MASS degree and Graduate Certificate in Intelligence Analysis may apply the five required courses for the certificate as the Cluster A of the MASS degree.

If a student is dual enrolled for the MASS degree and a Graduate level certificate and then opts to drop out of the certificate program, the Cluster requirement(s) revert to that of stand-alone MASS degree program. See Graduate Certificate in Leadership and Graduate Certificate in Intelligence Analysis for details.

Department of Psychology Graduate Programs

The Department of Psychology offers two graduate psychology programs, one in Clinical Counseling (M.A. only) and the other in School Psychology (Ed.S.). The two programs share 24 credit hours. These courses reflect the Department's recognition that all branches of psychology revolve around a common knowledge base with specializations being an extension beyond that base.

The Department of Psychology espouses a philosophical perspective of training and practice that stresses an empirical and applied approach to addressing psychosocial problems of clients. Most faculty members are engaged in clinical practice, research efforts, or both. Faculty members' activities are guided by a scientist-practitioner model, which emphasizes a scholarly approach to applications of psychology.

The Clinical Counseling program offers graduate education at the master's degree level for those interested in becoming professional counselors in community agencies, including college counseling centers, hospitals, mental health, and social services agencies. The program is accredited by the State Department of Education in South Carolina and the Masters in Psychology and Counseling Accreditation Council (MPCAC). Students enrolled in the Clinical Counseling program work to achieve a Master of Arts in Psychology degree by completing a total of 60 credit hours. The program includes 30 credit hours of core courses, 12 hours of advanced courses, 3 credit hours in addictions coursework, 3 credit hours in career counseling, 9 hours of fieldwork, and 3 hours of an elective. Fieldwork is completed in agencies throughout the tri-county area and involves a 100-hour practicum and 600-hour internship. Students completing the Clinical Counseling program meet the educational requirements for licensure as Professional Counselors and may for licensure as an Addictions Counselor in South Carolina.

The School Psychology program is built around the model of the data-based problem-solver at the individual, organizational, and systems levels in schools, with an emphasis on the efficacy of outcomes for clients served. The program involves 75-semester hours of credit, and it leads to the Education Specialist (Ed.S.) degree and certification as a "School Psychologist II" in South Carolina and National Certification as a School Psychologist. The School Psychology program is fully accredited by the National Association of School Psychologists (NASP). Students can apply for the award of a Master of Arts in Psychology degree after completing 39 semester hours from the School Psychology Program of Studies and receiving the approval of the Director of the School Psychology program and the Head of the Department of Psychology. PSYC-599, Thesis, MUST be completed as part of those 39 hours. It should be noted that students are not eligible for certification as a school psychologist at the Masters level (i.e., this is not a terminal degree). Information regarding both of these programs can be found on The Citadel's Psychology Department website at www.citadel.edu/psychology/graduate.html.

Master of Arts in Psychology: Clinical Counseling

Department of Psychology

843-953-5320 <http://www.citadel.edu/root/psychology>

Dr. Genelle Sawyer: genelle.sawyer@citadel.edu

Mission Statement

The mission of the Master of Arts in Psychology: Clinical Counseling program at The Citadel is to prepare students to become scholarly practitioners of psychosocial counseling in community agencies, including college counseling centers, hospitals, mental health centers, and social services agencies. The program emphasizes the application of theories of human development, psychopathology, and behavior change to psychosocial problems of a diverse population of individuals and families seeking mental health services in the community. The program's model blends didactic and experiential training to facilitate students' ability to utilize an empirical approach to assessment, goal development, intervention, and evaluation of services for a wide range of individuals and families experiencing a variety of psychosocial difficulties. It is the expectation of the program that students will be trained to be competent and ethical professional service providers who will apply a scholarly perspective as well as compassion and caring to their work.

Admission Requirements

Admission to the Clinical Counseling Program is based on a competitive review of all application materials.

1. Completion of the online graduate application along with the non-refundable application fee
2. Submission of an official transcript of the baccalaureate degree directly from each regionally accredited college or university. Applicants are expected to have a grade point average of 3.0 (or graduate grade point average of 3.0) and 12 credit hours in psychology. A score of 600 on the GRE Subject Examination in Psychology is acceptable in lieu of the credit hour requirement.
3. Submission of official Graduate Record Examination (GRE) or Millers Analogy Test (MAT) score. A minimum score of 150 on the Verbal Reasoning, 147 on the Quantitative Reasoning, and 3.5 Analytical Writing is preferred for the GRE or a score of 397 or higher on the MAT. Admission test must have been taken within the last five years. Standardized test requirement will be waived for those with a cumulative GPA of 3.8 or higher.
4. Submission of a completed Admissions Questionnaire
5. Submission of two letters of recommendation

Students requesting a transfer from another Master's program must provide documentation of a GRE or MAT score (copies are acceptable) in order to complete requirements for application to the program.

Application Deadlines

The Admissions Committee will consider complete applications for the program on the following dates:

Admission Term:	Materials Due:
Summer/Fall	February 15
Spring	October 1

Program Requirements

The Master of Arts in Psychology: Clinical Counseling curriculum provides instruction in the theory and practice of counseling from a psychological perspective. The curriculum consists of a total of 60 credit hours, including 30 credit hours of core courses, a three credit hour course in addictions, a three credit hour course in career counseling, 12 hours of advanced courses, three hours of electives, and nine hours of fieldwork. Fieldwork is completed in agencies throughout the tri-county area and involves a 100-hour practicum and 600-hour internship. Students who successfully complete this program meet the educational requirements for professional licensure as a Professional Counselor in South Carolina and may meet the requirements for a Licensed Addictions Counselor in South Carolina. The program addresses the development of counseling skills in a variety of treatment modalities, including individual, family and group. While some graduates have sought and gained admission to doctoral programs, the program is designed as a terminal master's degree program. The program is accredited by the Masters in Psychology and Counseling Accreditation Council (MPCAC). Students must abide by the Ethical Principles of Psychologists and Code of Conduct of the American Psychological Association throughout their enrollment.

The M.A. degree will be conferred on students who have successfully completed the requirements of the program with a minimum GPA of 3.0. All students must successfully complete a comprehensive examination after completing their ten core courses (see below) and must complete a written and oral presentation of a case study for a panel of faculty members as part of the internship requirement in order to complete the program. Students must complete all course requirements within a 5-year period from the date of initial enrollment. No more than 8 hours of graduate credit taken as a non-degree seeking student will be applied toward program requirements.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

Required Program for Clinical Counseling Students

CORE COURSES (30 hours)

PSYC-500	Human Growth and Development
PSYC-501	Principles of Cognitive and Behavioral Change
PSYC-507	General Psychopathology: Assessment and Differential Diagnosis
PSYC-508	Counseling and Personality Theories
PSYC-514	Ethics and Professional Issues in Counseling
PSYC-523	Statistics and Research Design
PSYC-526	Clinical Counseling: Basic
PSYC-549	Foundations of Psychometrics
PSYC-553	Introduction to Family Dynamics
PSYC-561	Cultural Issues in Psychological Practice

OTHER REQUIRED COURSES (6 hours)

PSYC-540	Theories and Biology of Addiction
EDUC-550	Career Counseling

Students completing the Clinical Counseling curriculum must successfully complete a comprehensive examination to be permitted to take the following Advanced Courses:

ADVANCED COURSES (21 hours)

PSYC-611	Clinical and Professional Issues in Counseling
PSYC-629	Practicum: Clinical Counseling
PSYC-643	Advanced Clinical Counseling: Assessment
PSYC-644	Advanced Clinical Counseling: Intervention
PSYC-645	Advanced Clinical Counseling: Group
PSYC-651	Internship I
PSYC-652	Internship II

ELECTIVES (3 hours)

PSYC-555	Special Topics in Psychology
PSYC-557	Counseling & Psychotherapy for Couples
PSYC-602	Social and Biological Basis of Child and Adolescent Behavior
PSYC-603	Affective and Cognitive Interventions: Child/Adolescent

Descriptions of courses are listed in the last section of this catalog.

Field Placement Requirements

Clinical Counseling students complete one 100-hour practicum and one 600-hour internship providing clinical services in a community agency subsequent to successful completion of PSYC-643, PSYC-644, and PSYC-645. Field placement opportunities are available in many agencies within the tri-county area. Field placement sites may require a background check prior to beginning training.

Students who have completed graduate work elsewhere but who desire admission to one of the Clinical Counseling practicum/internships for licensure or professional development reasons must receive formal approval by the Clinical Counseling Committee. Additionally, such students will be required to take the following four courses at The Citadel prior to admission to practicum:

PSYC-507	General Psychopathology: Assessment and Differential Diagnosis
PSYC-643	Contemporary Psychological Assessment and Psychotherapy
PSYC-644	Clinical Counseling: Advanced
PSYC-645	Clinical Counseling: Group

The Citadel has adopted this policy because of its ethical responsibilities to practicum agencies, the clients of the agencies, and to the students. Without this background of experience with students, The Citadel is not in a viable position to attest to the student's readiness for the practicum/internship placement.

Specialist in Education in School Psychology

Department of Psychology

843-953-5320

www.citadel.edu/root/psychology

Dr. Timothy A. Hanchon: tim.hanchon@citadel.edu

Mission Statement

The mission of the Specialist in Education (Ed.S.) program in School Psychology is to prepare students to become scientist-practitioners. This model sees the school psychologist as a data-based problem solver at the individual, group, and systems levels. The concept includes the interaction of the student in the classroom, the school system, the family, and the community. The Ed.S. degree emphasizes application of psychological principles, knowledge, and skills in relating to the process and problems of education. The program is approved by the South Carolina Department of Education, and graduates are eligible for certification at the School Psychologist Level II in South Carolina. The program is also approved by the National Association of School Psychologists (NASP, 2003).

Admission Requirements

Admission to the School Psychology Program is based on a competitive review of application materials.

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of an official transcript reflecting the highest degree earned from a regionally accredited college or university. Minimum requirements for consideration include an overall undergraduate grade point average of 3.0 (or graduate grade point average of 3.0)
3. Submission of official Graduate Record Examination (GRE) or Miller Analogies Test (MAT) score. No minimum score is required to be considered for admission. Admission test must have been taken within the last five years.
4. Submission of a completed Admissions Questionnaire.
5. Submission of two letters of recommendation.

Application Deadline

The Admissions Committee will consider complete applications for the program on the following date:

Admission Term:	Materials Due:
Summer/Fall	March 1

Program Requirements

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

The Ed.S. degree in School Psychology consists of 75 semester hours with four interacting components.

CORE COURSES

Focus on psychological foundations with emphasis on the role, functions, and scope of the profession of school psychology (27 hours).

- PSYC-500 Human Growth and Development
- PSYC-501 Principles of Behavior and Cognitive Change
- PSYC-507 General Psychopathology: Assessment & Differential Diagnosis
- PSYC-508 Counseling and Personality Theories
- PSYC-512 Ethics, Roles, & Law
- PSYC-523 Statistics & Research Design
- PSYC-525 Basic Counseling Techniques
- PSYC-549 Foundations of Psychometrics
- PSYC-561 Cultural Issues in Psychological Practice

ADVANCED COURSES

Applied courses with emphasis on the knowledge and skills more specific to educational settings (33 hours)

- PSYC-502 Psychological & Educational Exceptionalities: Child/Adolescent
- PSYC-503 Objective Assessment
- PSYC-504 Special Techniques in Assessment
- PSYC-505 Personality, Social, & Emotional Assessment
- PSYC-602 Social & Biological Basis of Child and Adolescent Behavior
- PSYC-605 Systems Theory & Consultation: Prevention and Intervention*
- PSYC-606 Educational Interventions*
- PSYC-607 Behavioral and Emotional Interventions*
- PSYC-608 Advanced Counseling Techniques for School Psychologists
- PSYC-612 Reading Assessment and Interventions
- PSYC-620 Contemporary Issues in School Psychology

*Course taught in conjunction with Practicum in Consultation. Students are required to complete a consultation project in the public schools.

DATA-BASED PROBLEM SOLVING

Courses critical to functioning as a data-based problem-solver which provide supervised, hands-on training in assessment and intervention skills within school settings (12 hours)

Prerequisite: Students cannot begin this block of courses until they have officially been admitted into the School Psychology Program and completed all prerequisites.

PSYC-615 Practicum in School Psychology I
PSYC-616 Practicum in School Psychology II
PSYC-617 Consultation & Intervention Practicum I
PSYC-618 Consultation & Intervention Practicum II
PSYC-621 Internship in School Psychology I
PSYC-622 Internship in School Psychology II
*NOTE: PSYC 615/617 & 616/618 are co-requisites

SCIENTIST PRACTITIONER

Experience as a scientist practitioner in gathering, analyzing, and interpreting data (three hours)

PSYC-599 Thesis (must be completed prior to award of the M.A.)

Students in the School Psychology program who successfully complete the 75 semester hours and other Program requirements (see School Psychology Program Handbook) are awarded the Ed.S. degree. Students must complete all course requirements within a 4-year period from the date of initial enrollment. Internship requirements must be completed within 2 years of the completion of course work or 6 years from date of initial enrollment. Students may apply for a Master of Arts in Psychology degree after completion of 39 semester hours from the School Psychology Program of Studies, 3 of which must include PSYC 599 (Thesis).

No more than 8 hours of graduate credit taken as a non-degree-seeking student will be applied toward program requirements.

Field-Based Placement Requirements

School Psychology students must complete all course work before placement in an internship setting (including Thesis). Students are required to spend a minimum of 1200 clock hours in a supervised internship and complete all internship requirements within 2 years.

To meet South Carolina certification requirements, students who plan to complete an internship must apply through the South Carolina Department of Education (SCDOE) for an internship certificate (Level I certification). To meet these requirements, internship candidates must submit an Application for Internship, Teacher Certification Application, SCDOE required fees, a copy of their social security card, and fingerprints for FBI/SLED background check to the Internship Coordinator of School Psychology for submission to the South Carolina Office of Educator Certification.

Other field-based experiences may require a criminal background check prior to field placement.

Program Sequence


PSYC 503, 504, 505, and 615/616 must be taken in the prescribed sequence, with each course building on the preceding one incrementally. The intervention courses (PSYC-605, 606, 607, 608, 612, and 617/618) must be taken concurrently with PSYC- 615/616 (Practicum in School Psychology I/II) to allow for further practical experience with intervention skills within the schools. Please note that ALL full-time school psychology students must be enrolled in PSYC 503 and PSYC 512 during their first Fall semester in order to avoid an extension of their course work by one year.

Descriptions of courses are listed in the last section of this catalog.

Attendance Policy

The Catalog of The Citadel Graduate College delineates a general policy regarding class attendance. Students are expected to be familiar with this general attendance policy. Unless stated differently in course syllabi, this general policy is in effect and course instructors can fail a student who misses more than 20% of classes.

The graduate program in School Psychology is, by its nature, an applied practitioner program leading to an anticipated passing score on the PRAXIS II School Psychology subject test and certification as a Level II School Psychologist in South Carolina. A number of the courses are designed to facilitate the acquisition of hands-on experiences with various diagnostic, evaluation, and intervention techniques where skill acquisition is based on instructor demonstrations and modeling, guided individual and group practice and participation by the student, role playing, and group activities, such as simulations, that build the necessary foundations for the acquisition of the basic skills necessary to the practice of the profession of School Psychology. In these courses, a strict absence policy has been adopted to ensure that learning experiences are not compromised. Specifically, courses that fall under this absence policy are as follows: PSYC-503, PSYC-504, PSYC- 505, PSYC-512, PSYC 612, PSYC-615/616, PSYC-617/618, PSYC-605, PSYC-606, PSYC-607, PSYC-608, PSYC-621, and PSYC-622. Students enrolled in these classes are advised to consult their syllabus and instructor for more specific details.



SWAIN FAMILY
SCHOOL OF SCIENCE
AND MATHEMATICS

MASTER OF ARTS

- BIOLOGY
- ACCELERATED BIOLOGY
- SPORT MANAGEMENT

MASTER OF SCIENCE

- COMPUTER AND INFORMATION SCIENCES
- HEALTH, EXERCISE, & SPORT SCIENCE
- HEALTH, EXERCISE, & SPORT SCIENCE: CONCENTRATION IN TACTICAL PERFORMANCE AND RESILIENCY

Master of Arts in Biology

Department of Biology

843-953-5203

www.citadel.edu/root/biology

Dr. Paul Nolan, 843-953-7076

paul.nolan@citadel.edu

Mission Statement

The Master of Arts in Biology degree is designed to advance the knowledge of students in a variety of biological disciplines. The purpose of this degree is to offer certified secondary school teachers, business people and other professionals the opportunity to advance their knowledge in the rapidly expanding discipline of biology. For teachers, the degree enhances their ability to teach a variety of courses within the discipline. For other professionals, the program allows individuals to construct a program for professional advancement in their field.

Admission Requirements

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of an official transcript reflecting the highest degree earned from a regionally accredited college or university.
3. Submission of official Graduate Record Examination (GRE) or the Miller Analogies Test (MAT) score. Minimum acceptable score for the GRE is a verbal and quantitative combination of 290. The minimum for the MAT is a raw score of 396.* Admission test must have been taken within the last five years.

*Students who score between 283 and 289 on the GRE or between 380 and 395 on the MAT may be provisionally accepted into the MA degree program provided all other admission requirements have been met. A student with provisional status who completes the first eight hours of degree coursework with a 3.50 GPA will be classified as regular-degree seeking status. Students who score 282 or below on the GRE or 379 or below on the MAT will not be admitted.

**Environmental Studies graduate certificate students who have successfully completed 9 graduate hours may apply to waive the *testing requirement* for admission to the Master of Arts in Biology program. Successful completion requires a minimum 3.0 GPA with no course grades below B-.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

Program Requirements

The Master of Arts in Biology program requires a minimum of eight graduate level courses totaling at least 32 credit hours. At least 20 credit hours must be in biology courses chosen from the list below. With the approval of the graduate advisor, students in the M.A. in Biology program may apply up to 12 credit hours in allied areas toward their graduation requirements. These allied areas may include, but are not limited to, education, chemistry, geology, psychology, and physics. Students admitted to the program are not required to have an undergraduate major in biology, however it is assumed that students have had at least eight hours in college level biology courses. Prospective students who do not have the recommended eight hours in undergraduate biology must confer with the department head or graduate advisor prior to beginning the program. All students must meet with the graduate advisor prior to beginning their course of study.

Courses

BIOL-502—Comparative Vertebrate Anatomy
BIOL-505—Biometry
BIOL-506—Ecology
BIOL-508—Genetics
BIOL-509—Marine Biology
BIOL-510—Vertebrate Natural History
BIOL-512—Descriptive Histology
BIOL-518—Ornithology
BIOL-519—Economic Botany
BIOL-526—Freshwater Biology
BIOL-532—Developmental Biology
BIOL-601—Evolution of Animals
BIOL-602—Morphological Survey of the Plant Kingdom
BIOL-603—General Physiology
BIOL-604—Marine Invertebrates
BIOL-605—Laboratory Methods in Biology
BIOL-606—Field Methods in Biology
BIOL-607—Microbiology
BIOL-609—Seminar in Environmental Studies
BIOL-610—Special Topics in Biology
BIOL-611—Graduate Research
BIOL-612—Cell and Molecular Biology
BIOL-621—Aquatic Toxicology
BIOL-624—Molecular Genetics and Recombinant DNA:
BIOL-625—Tropical Rainforest and Reef Ecology
BIOL-631—Environmental Physiology

Total Credit Hours: 32

Descriptions of courses are listed in the last section of this catalog.

Accelerated Master of Arts in Biology

Department of Biology
843-953-5203
www.citadel.edu/root/biology

Dr. Paul Nolan, 843-953-7076
paul.nolan@citadel.edu

Mission Statement

The Accelerated Master of Arts in Biology program is designed to provide Citadel undergraduate students an accelerated route to obtain a Master's degree in Biology. The purpose of this program is to offer advanced undergraduate students the opportunity to begin taking graduate-level courses during their senior year, and have those courses be applied toward an M.A. in Biology degree.

After earning a Bachelor's degree, students in this program will continue their graduate coursework until completing the requirements for the M.A. in Biology program. It is expected that students in this program will complete the requirements for both the Bachelor's degree and the Master's degree in a total of five years. Undergraduates in this program will acquire a broader and deeper education in modern biology through additional advanced coursework. An advanced degree in Biology can provide employment opportunities that the Bachelor's degree alone cannot provide. This program will also provide students looking to strengthen their application credentials to professional schools, including medical and dental schools, an opportunity to pursue an advanced degree in an accelerated timeframe.

Admission Requirements

The program is available to Citadel undergraduate students majoring in any discipline as long as they have successfully completed a minimum of eight credit hours in biology coursework. Students interested in this program should apply during their junior or senior year. However, students are encouraged to apply by the end of their junior year to help ensure that they have the full subsequent year, including the summer, to begin taking courses for graduate credit. This program is not available to undergraduates enrolled at other institutions, or who those have completed a Bachelor's degree or advanced degree at another institution.

1. Complete and return an online application form along with the non-refundable application fee to The Citadel Graduate College.
2. Applicants are expected to have a cumulative undergraduate GPA of 3.5 or higher.
3. Senior (1A) classification

Program Requirements

Program requirements for the Accelerated Master of Arts in Biology are identical to that of the Master of Arts in Biology program. A student enrolled in the Accelerated Master's Program can register for up to two graduate level courses during the summer and one graduate level course during each of the fall and spring semesters. Undergraduate students enrolled in graduate classes will be held to The Citadel Graduate College policies in those classes, including academic standards, grades, and attendance. Cadets in graduate classes will continue to be subject to the honor system as prescribed by "The Honor Manual of the South Carolina Corps of Cadets." Following successful completion of the requirements for the Bachelor's degree, students would be classified as graduate students by The Citadel Graduate College and follow all of their policies and procedures.

At the discretion of the graduate program director and the student's undergraduate major dean/department head, the student may have up to two courses, or eight credit hours, waived from their undergraduate major degree requirements for completing graduate level courses with a grade of B or higher.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

Courses

BIOL-502—Comparative Vertebrate Anatomy
BIOL-505—Biometry
BIOL-506—Ecology
BIOL-508—Genetics
BIOL-509—Marine Biology
BIOL-510—Vertebrate Natural History
BIOL-512—Descriptive Histology
BIOL-518—Ornithology
BIOL-519—Economic Botany
BIOL-526—Freshwater Biology
BIOL-532—Developmental Biology
BIOL-601—Evolution of Animals
BIOL-602—Morphological Survey of the Plant Kingdom
BIOL-603—General Physiology
BIOL-604—Marine Invertebrates
BIOL-605—Laboratory Methods in Biology
BIOL-606—Field Methods in Biology
BIOL-607—Microbiology
BIOL-609—Seminar in Environmental Studies
BIOL-610—Special Topics in Biology
BIOL-611—Graduate Research
BIOL-612—Cell and Molecular Biology
BIOL-621—Aquatic Toxicology
BIOL-624—Molecular Genetics and Recombinant DNA:
BIOL-625—Tropical Rainforest and Reef Ecology
BIOL-631—Environmental Physiology

Total Credit Hours: 32

Descriptions of courses are listed in the last section of this catalog.

Master of Science in Computer and Information Sciences

Department of Cyber and Computer Sciences
843-953-5048
<http://www.citadel.edu/ccs>

Dr. Shankar Banik, Department Head
843-953-5039, shankar.banik@citadel.edu
Dr. Michael Verdicchio, Program Director
843-953-6987, mv@citadel.edu

Mission

The Master of Science in Computer and Information Sciences is designed to offer professionals an opportunity to attain an advanced degree in the computer science field while upgrading their skills and knowledge. The Computer and Information Sciences program is a joint program with the College of Charleston.

Admission Requirements

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of an official transcript of the baccalaureate degree and all other undergraduate or graduate work directly from each regionally accredited college and university.
3. Applicants are expected to have an undergraduate grade point average of at least 3.0.
4. Submission of official Graduate Record Examination (GRE) score. Minimum combined score of 300 on the verbal and quantitative sections of the general test (minimum of 1000 under the old grading system) and a minimum score of 4.0 on the writing assessment is required. Admission test must have been taken within the last five years.
5. Approval from the Program Director or Department Head before registering for any graduate Computer and Information Sciences (CSCI) courses.
6. Competency, demonstrated through coursework, approved work experience, or a program administrated competency exam, in the areas of basic Computer Architecture, Object-oriented Programming, Discrete Mathematics, and Data Structures.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

Degree Requirements

The Master of Science in Computer and Information Sciences degree is conferred upon those candidates who successfully complete an approved program of study consisting of a minimum of 33 semester hours of graduate credit (of which no more than nine may be transfer credit) with a cumulative GPA of 3.0. At least 11 credit hours must be taken at each institution.

All degree candidates must:

1. Complete the following four core courses for a total of 12 hours.
CSCI-601 Data Modeling and Database Design
CSCI-602 Foundations of Software Engineering
CSCI-603 Object-Oriented Design Patterns
CSCI-604 Distributed Computer Systems Architecture
2. Declare an area of specialization from among Computer Science, Cybersecurity, Information Systems, or Software Engineering, and complete four courses in that area (12 credit hours).
 - Degree candidates in the Computer Science specialization must complete four courses from the courses numbered 612, 614, 616, 618, 632, 638, 674, or 690 when approved by the department head or program director. Three of the four courses must be from the courses numbered 612, 614, 616, or 618.
 - CSCI-612 Advanced Computer Organization
 - CSCI-614 Advanced Operating Systems
 - CSCI-616 Automata
 - CSCI-618 Programming Languages
 - CSCI-632 Data Communications and Networking
 - CSCI-638 Advanced Topics in Database Systems
 - CSCI-674 Introduction to Computer Graphics
 - Degree candidates in the Cybersecurity specialization must complete the following four courses: 614, 631, 632, and 641.
 - CSCI-614 Advance Operating Systems
 - CSCI-631 Privacy and Security Issues
 - CSCI-632 Data Communications and Networking
 - CSCI-641 Advanced Cybersecurity
 - Degree candidates in the Information Systems specialization must complete four courses from the courses numbered 631, 632, 634, 636, 638, 659, 672, or 690 when approved by the department head or program director. Two of the courses must be 631 and 632.
 - CSCI-631 Principles of Computer Security
 - CSCI-632 Data Communications and Networking
 - CSCI-634 Project Change and Management
 - CSCI-636 Information Technology Policy, Strategy, and Governance
 - CSCI-638 Advanced Topics in Database Systems
 - CSCI-659 Service-Oriented Computing
 - CSCI-672 Human-Computer Interaction
 - Degree candidates in the Software Engineering specialization must complete four courses from the courses numbered 634, 654, 656, 657, 658, 659, 672, or 690 when approved by the department head or program director. One of these courses must be 656 and another of the courses must be chosen from 654 and 658.
 - CSCI-634 Project Change and Management
 - CSCI-654 Software Requirements Analysis and Specifications
 - CSCI-656 Software Systems Design and Implementation
 - CSCI-657 Embedded Systems Design
 - CSCI-658 Software Testing and Maintenance
 - CSCI-659 Service-Oriented Computing
 - CSCI-672 Human-Computer Interaction
3. Complete one of the following three options (nine hours).
 - CSCI-699 Research thesis (six hours) plus one elective.
 - CSCI-698 Project Thesis (three hours) plus two electives.
 - Three electives (nine hours).

ENGR 650, Overview of Technical Project Management, may be substituted for CSCI 634 in satisfying degree requirements for the M.S. in Computer and Information Science.

Descriptions of courses are listed in the last section of this catalog.

Department of Health & Human Performance

Mission Statement

The goals of the M.S. in Health, Exercise, & Sport Science and M.A. in Sport Management are to provide an exemplary educational environment and experiences leading to advanced skills, knowledge, and attitudes within domains of human movement; healthful living; individual growth and development; and management and administration of sport, exercise, and recreation programs.

These programs provide scholarly approaches to the study of professions in health science, exercise science, sport science, human performance, sport administration, sport marketing, and promotions of sport and related organizations. These advanced degree programs prepare graduates for leadership positions including those within the sport and recreation industry, college and university sports, intramurals, recreation, sport club programs, resort programming, wellness and fitness industries, human performance laboratories, health and physical performance organizations, and health, sport, and athletic administration.

Master of Science in Health, Exercise & Sport Science

Department of Health & Human Performance

www.citadel.edu/root/hhpprograms/graduate/master-of-science-health-exercise-sport-science

Dr. Christopher J. Sole, Program Director
843-953-6386, csole@citadel.edu

Admission Requirements

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of an official transcript reflecting the highest degree earned from a regionally accredited college or university.
3. Submission of official Miller Analogies Test (MAT) or Graduate Record Examination (GRE) scores.* Admission test must have been taken within the last five years.
4. Submission of three signed letters of recommendation. These may be from faculty members of the applicant's undergraduate institution and/or from associates in business, government, education, or military service.
5. Submission of a resume detailing previous work experiences.
6. A one-page letter describing why you are interested in the MS in Health, Exercise, & Sport Science program.

*Minimum acceptable score for the MAT is 396. Minimal acceptable GRE score is a combined verbal and quantitative score of 290. Applicants who score between 283 and 289 on the GRE may apply for provisional status provided all other requirements have been met. A student with provisional status who completes 6 graduate semester hours in one semester and maintains a 3.5 grade point ratio will be classified as a regular degree-seeking student.

Program Requirements

The program consists of thirty-nine (39) or forty-two (42) semester credit hours depending on course selection. Either twenty-one (21) or twenty-four (24) hours are derived from seven (7) or eight (8) required core courses. The balance of hours (18) may be taken from approved health, exercise, and sport science electives. Within the broad scope of courses offered, each program of study is individually structured to accommodate the needs and interests of the student while assuring mastery of the disciplines of health science, exercise science, and sport science. Each student enrolled in this program is expected to integrate components of research, apply contemporary technological and/or computer expertise, and practice effective oral and written communications skills through each phase of the program. During the last semester of program work, each student is required to take a written and oral exit competency examination. Questions for the written phase are drawn from coursework completed by each student in the Department of Health, Exercise, & Sport Science.

After the written exam is evaluated, each student may undergo an oral exam consisting of questions selected by members of the departmental faculty. Any student who does not satisfactorily complete the exit competency examination may be required to retake the exam or take additional courses or accomplish individualized study to strengthen identified areas.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

Core Course Requirements

Depending upon program emphasis, seven (7) or eight (8) courses within the curriculum are designated “Core Courses” are required for each student:

- HESS-501 Nutrition
- HESS-505 Motor Development and Motor Learning
- HESS-506 Applied Exercise Physiology
- HESS-510 Biomechanics of Sport Techniques
- HESS-540 Research Techniques & Methods of Analyzing Research in Health, Exercise, & Sport Science I
- HESS-544 Exercise Testing & Assessment

and

- HESS-507 Special Problems in Health, Exercise, & Sport Science *

or

- HESS-542 Practicum in Health, Exercise, & Sport Science *

or

- HESS-598 Thesis I in Health, Exercise, & Sport Science (3) *
- HESS-599 Thesis II in Health, Exercise, & Sport Science (3) *

* HESS-540 is a prerequisite or co-requisite for this course

Approved Electives

Each student is required to choose a **minimum** of six (6) courses (18 hours) from the following list of approved elective courses.

- HESS-502 Drug & Substance Abuse
- HESS-504 Public Health
- HESS-508 Epidemiology
- HESS-511 Special Topics in Health, Exercise, & Sport Science (Exercise Science)
- HESS-534 Accommodating Persons with Disabilities in Sport & Physical Activity
- HESS-541 Current and Future Trends in Health, Exercise, & Sport Science
- HESS-543 Consumer Health
- HESS-545 Nutrition for Exercise, Sport, & Physical Activity ****
- HESS-546 Environmental Physiology ***
- HESS-547 Techniques of Conditioning for Sport & Physical Fitness
- HESS-548 Psychology of Sport & Motivation

HESS-560 Research Techniques & Methods of Analyzing Research in Health, Exercise, & Sport Science II * **
HESS-554 Analysis of Sport Skills & Techniques

* HESS-540 is a prerequisite or co-requisite for this course
** This course or an equivalent course may be required if a student chooses the thesis option

*** HESS-506 is a prerequisite for this course

**** HESS-501 is a prerequisite for this course

- Opportunities exist for development of specialized programs of study emphasizing Health Science, Exercise Science, or Sport Science.
- Common threads of effective written and oral communication skills, research methodology, applied contemporary technology and computer expertise, collaboration and cooperation with other disciplines, and reflective learning will be incorporated within each course in the Master of Science curriculum.

Total program hours: 39 or 42 (21/24 core hours + 18 electives)

Descriptions of courses are listed in the last section of this catalog.

Master of Science in Health, Exercise & Sport Science: Concentration in Tactical Performance and Resiliency

Department of Health & Human Performance
www.citadel.edu/root/hhpprograms/graduate/
master-of-science-health-exercise-sport-science

Dr. Chris Bellon, Program Director
843-953-1652, cbellon@citadel.edu

Mission Statement

The essential mission of the M.S. in Health, Exercise, & Sport Science with the Concentration in Tactical Performance and Resiliency is to empower high potential individuals with in-depth theoretical and practical understanding of the physiological and psychological challenges associated with preparing tactical athletes for optimum performance and resiliency on and off the job. Tactical athletes include military personnel, first responders, and veterans. This program will expand skills and knowledge well beyond that offered by professional certifications alone. Graduates of this program will have completed a rigorous program of study, will have acquired a minimum of three professional certifications, and will have had rich practical experiences. The combination of experiences will prepare them to effectively train and coach units/groups of tactical athletes in areas including, but not limited to: Active-duty, Guard, and Reserve Military Forces, firefighting, law enforcement, and elite Special Forces.

Admission Requirements

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of an official transcript reflecting the highest degree earned from a regionally accredited college or university.
3. Submission of official Miller Analogies Test (MAT) or Graduate Record Examination (GRE) scores.* Admission test must have been taken within the last five years.
4. Submission of three signed letters of recommendation. These may be from faculty members of the applicant's undergraduate institution and/or from associates in business, government, education, or military service.
5. Submission of a resume detailing previous work experiences.
6. A one-page letter describing why you are interested in the Concentration in Tactical Performance and Resiliency.

*Minimum acceptable score for the MAT is 396. Minimal acceptable GRE score is a combined verbal and quantitative score of 290. Applicants who score between 283 and 289 on the GRE may apply for provisional status provided all other requirements have been met. A student with provisional status who completes 6 graduate semester hours in one semester and maintains a 3.5 grade point ratio will be classified as a regular degree-seeking student.

Program Requirements

The M.S. in Health Exercise & Sport Science: Concentration in Tactical Performance and Resiliency consists of thirty-six (36) semester credit hours. Eighteen (18) of those credit hours come from core courses from health, exercise, and sport science. Additionally, fifteen (15) credit hours are derived from courses specific to the Concentration in Tactical Performance and Resiliency, while three (3) credit hours come from one of approved elective course based on the direction you wish to take with your degree.

During the last semester of program work, each student is required to take a written and oral exit competency examination. Questions for the written phase are drawn from coursework completed by each student in the Department of Health, Exercise, & Sport Science.

After the written exam is evaluated, each student may undergo an oral exam consisting of questions selected by members of the departmental faculty. Any student who does not satisfactorily complete the exit competency examination may be required to retake the exam or take additional courses or accomplish individualized study to strengthen identified areas.

GRADUATION REQUIREMENTS (non-credit bearing)

1. Darkness to Light Training
2. The Citadel Principled Leadership Seminar – LDRS 500
3. Successful completion of the **Tactical Strength and Conditioning-Facilitator** certification (National Strength and Conditioning Association)
4. One (1) or more professional certifications from the list below:
 - **Certified Personal Trainer** (National Strength and Conditioning Association, American College of Sports Medicine, National Academy of Sports Medicine, American Council on Exercise)
 - **Certified Strength and Conditioning Specialist** (National Strength and Conditioning Association)
 - **Corrective Exercise Specialist** (National Academy of Sports Medicine)
 - **Performance Enhancement Specialist** (National Academy of Sports Medicine)
 - **Exercise Physiologist** (American College of Sports Medicine)
5. Proof of current Certification in First Aid and CPR
6. Proof of current Certification in Mental Health First Aid

Course Requirements

CORE COURSES (18 credit hours)

- HESS-501 Nutrition
- HESS-505 Motor Development and Motor Learning
- HESS-506 Applied Exercise Physiology
- HESS-510 Biomechanics of Sport Techniques
- HESS-540 Research Techniques & Methods of Analyzing
Research in Health, Exercise, & Sport Science I
- HESS-544 Exercise Testing & Assessment

CONCENTRATION COURSES (15 credit hours)

- PSYC-516 Psychological Resiliency for Tactical Athletes
- TAPR-601 Introduction to Human Performance
- TAPR-610 Applied Exercise Physiology and Nutrition
- TAPR-640 Tactical Strength and Conditioning
- TAPR 699 Capstone Internship in Tactical Performance &
Resiliency

APPROVED ELECTIVE COURSES (3 credit hours, choose one course)

- HESS-534 Accommodating Persons with Disabilities in Sport
& Physical Activity
- HESS-546 Environmental Physiology
- HESS-550 Instructional Aspects of Teaching Physical
Education
- HESS-560 Research Techniques & Methods II
- PSYC-604 Applied Principles of Behavior Change for Tactical
Athletes

Total program hours: 36 credit hours

Descriptions of courses are listed in the last section of this catalog.

Master of Arts in Sport Management

Department of Health & Human Performance

www.citadel.edu/root/hess-programs/
graduate/master-of-arts-sport-management

Dr. Stavros Triantafyllidis, Program Director
843-953-4852, striantaf@citadel.edu

Admission Requirements

1. Contact the Director of Graduate Studies for the Department of Health, Exercise, and Sport Science.
2. Completion of the online graduate application along with the non-refundable application fee.
3. Submission of an official transcript of the baccalaureate degree directly from a regionally accredited college or university.
4. Submission of official Miller Analogies Test (MAT) or the Graduate Record Examination (GRE) score. Minimum acceptable score for the MAT is 396. Minimal acceptable GRE score is a combined verbal and quantitative score of 290.* Admissions test must have been taken within the last five years.
5. Submission of three signed letters of recommendation. These may be from faculty members of the applicant's undergraduate institution and/or from associates in business, government, education, or military service.
6. Submission of a resume detailing previous work experiences.

*Applicants who score between 380 and 395 on the MAT or between 283 and 289 on the GRE may apply for provisional status provided all other requirements have been met. A student with provisional status who completes 6 graduate semester hours in one semester and maintains a 3.5 grade point ratio will be classified as a regular degree-seeking student.

Under circumstances, such as extensive work in the field of Sport Management (at least 6 years), an applicant can be admitted in the program without MAT or GRE scores.

Students accepted to the Master of Arts Sport Management program will automatically be enrolled in the Graduate Certificate in Sport Management. See certificate section of the catalog for more information.

Program Requirements

The program consists of thirty-nine (39) semester credit hours. Twenty four (24) hours are derived from seven (7) required core courses. The balance of hours (15) may be taken from approved health, exercise, and sport science electives and a maximum of three (3) hours of free electives. Within the broad scope of courses offered, each program of study is individually structured to accommodate needs and interests of the student while assuring mastery of the discipline of sport management. Each student enrolled in this program is expected to integrate components of research, apply contemporary technological and/or computer expertise, and practice effective oral and written communications skills through each phase of

the program. One of the required components of the program is the Internship, which requires the student to spend 500 hours at an environment that is related to the future goals of the student, and which provides "hands-on" training for the field of choice.

During the last semester of program work, graduating students are required to present and defend a Professional Portfolio that includes academic as well as professional and other artifacts, as per demands by the M.A. in Sport Management degree program. Requirements for said Portfolio will be communicated to the student after acceptance in the program.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

CORE COURSES (7 courses, 24 credit hours)

HESS-518	Sport Marketing (3)
HESS-521	The Art of Selling in Sport (3)
HESS-523	Administration & Leadership of Exercise & Sport Organizations (3)
HESS-538	Internship in Sport Management (6) ~
HESS-539	Sport Public Relations & Promotions (3)
HESS-556	Sport Finance (3)

OR

HESS-557	Economics of Sport (3)
HESS-559	Research in Sport Management (3)

ELECTIVE COURSES (Choose 5 courses, 15 credit hours)


HESS-507	Special Problems in HESS (3) *
HESS-511	Special Topics in HESS (3)
HESS-513	Sport Facility & Event Management (3)
HESS-520	Special Topics in Sport Management (3) *
HESS-529	Special Problems in Sport Management (3) *
HESS-530	Practicum in Sport Management (3) ~
HESS-541	Current & Future Trends in HESS (3) *
HESS-542	Practicum in HESS (3) ~ *
HESS-548	Psychology of Sport & Motivation (3)
HESS-549	Sociological & Cultural Aspects of Sport (3)
HESS-552	Fundraising of Sport Organizations (3)
HESS-553	Sport Communication (3)
HESS-555	Legal Aspects of Sport (3)
HESS-556	Sport Finance (3)
HESS-557	Economics of Sport (3)
HESS-558	Advertising in Sport (3)

~ Minimum of 20 credit hours need to be completed prior to enrollment.

* HESS-540 **OR** HESS-559 is a prerequisite or co-requisite.

TOTAL PROGRAM HOURS: 39
(24 core hours + 15 elective hours)

Descriptions of courses are listed in the last section of this catalog.



ZUCKER FAMILY
SCHOOL OF
EDUCATION

MASTER OF ARTS IN
TEACHING

- SECONDARY
- MIDDLE GRADES
- PHYSICAL EDUCATION

MASTER OF EDUCATION

- COUNSELOR
EDUCATION
- EDUCATIONAL
LEADERSHIP
- HIGHER EDUCATION
- INTERDISCIPLINARY
STEM EDUCATION
- LITERACY EDUCATION

SPECIALIST IN EDUCATION

- EDUCATIONAL
LEADERSHIP

ZUCKER FAMILY SCHOOL OF EDUCATION

Graduate Programs

The purpose of the graduate programs of the Zucker Family School of Education is to serve the people of the Lowcountry, the state of South Carolina, and the Southeast by providing high quality programs in the areas of professional education and school counseling. The School offers programs to prepare school teachers, school counselors, literacy teachers, literacy coaches, and educational administrators.

The Citadel has been involved in the preparation of teachers since the creation of the School of Education and Psychology in 1929. In 1954, the School of Education was approved as a separate department. Master's degree programs for teachers and Master's degree programs for prospective counselors were authorized in 1968. Master's degree programs for school administrators were authorized in 1970. The Educational Specialist degree in educational administration was approved in 1975, and the Educational Specialist degree in School Psychology was approved in 1980.

Prior to 1974, the South Carolina State Department of Education (SCDE) approved The Citadel's Educator Preparation programs. In 1974, all professional education programs offered by The Citadel were initially accredited by the National Council for Accreditation of Teacher Education (NCATE). Both state-approved program status and national accreditation have been continuous since they were initially granted. The most recent SCDE, Commission on Higher Education (CHE), and NCATE/CAEP program reviews, conducted in the spring of 2013, resulted in continuing program accreditation approval. The Council for Accreditation of Counseling and Related Educational Programs (CACREP) granted accreditation in July 2005 to the School Counseling Programs which offers a Master of Education in Counselor Education.

Statement of Philosophy

The philosophy of the Zucker Family School of Education at The Citadel is based on five fundamental propositions. These propositions serve to orient the mission and conceptual base of the School, guide the actions and value system of the faculty, shape the curricula of the various programs, and provide to its faculty their sense of purpose and meaning for teaching, scholarship, and professional service. These five propositions are:

1. The faculty is committed to promoting education for all individuals to the fullest extent possible. With the implementation of appropriate teaching and assessment strategies, a fundamental guiding belief is that all students, though having unique learning styles and experiences, are capable of learning.

2. It is the educator's responsibility, with the aid of appropriate resources and support, to establish a mutually respectful environment where effective learning occurs for all students.
3. Education is a systematic effort to facilitate the knowledge, skills, attitudes, and values necessary for the student to function in a diverse society.
4. The faculty is committed to upholding the highest professional standards in all situations in which they model these standards to students through their teaching, research, and service endeavors.
5. The faculty is committed to an open interchange of ideas wherein the perspectives of all are valued.

The School's Conceptual Model

The Citadel's Professional Education Unit prepares principled educational leaders to be knowledgeable, reflective, and ethical professionals. Candidates completing our programs are committed to ensuring that all students succeed in a learner-centered environment.

Rationale:

- Society is in need of principled educational professionals committed to ensuring all students learn;
- All children and young adults require high quality educational experiences that enable them to compete and prosper in the global economy; and
- Such high quality educational experiences require a transformed educational system focused on fostering twenty-first century knowledge and skills in all children and young adults.

The Citadel's Professional Education Unit is committed to the simultaneous transformation of the preparation of educational leaders and of the places where they work. Specifically, The Citadel's Professional Education Unit seeks to develop principled educational leaders who:

- Have mastered their subject matter and are skilled in using it to foster student learning;
- Know the self who educates (Parker J. Palmer) and integrate this self-knowledge with content knowledge, knowledge of students, and in the context of becoming professional change agents committed to using this knowledge and skill to ensure that all students succeed in a learner-centered environment; and
- Exemplify the highest ethical standards by modeling respect for all human beings and valuing diversity as an essential component of an effective learner-centered environment.

Through our initial program for teacher candidates for P-12 schools and our advanced programs for professional educators in P-20 schools, The Citadel's Professional Educational Unit shapes cadets and graduate students into principled educational leaders capable of and committed to transforming our schools into learning communities where all succeed.

The Citadel's Professional Educational Unit has identified 15 performance indicators for candidates to demonstrate that they are principled educational leaders who are knowledgeable, reflective, and ethical professionals:

Knowledgeable Principled Educational Leaders...

1. Have mastered the subject matter of their field of professional study and practice;
2. Utilize the knowledge gained from developmental and learning theories to establish and implement an educational program that is varied, creative, and nurturing;
3. Model instructional and leadership theories of best practice;
4. Integrate appropriate technology to enhance learning;
5. Demonstrate a commitment to lifelong learning;

Reflective Principled Educational Leaders...

1. Develop and describe their philosophy of education and reflect upon its impact in the teaching and learning environment;
2. Develop and manage meaningful educational experiences that address the needs of all learners with respect for their individual and cultural experiences;
3. Construct, foster, and maintain a learner-centered environment in which all learners contribute and are actively engaged;
4. Apply their understanding of both context and research to plan, structure, facilitate, and monitor effective teaching and learning in the context of continual assessment; and
5. Reexamine their practice by reflectively and critically asking questions and seeking answers.

Ethical Principled Educational Leaders...

1. Demonstrate commitment to a safe, supportive, learning environment;
2. Embrace and adhere to appropriate professional codes of ethics;
3. Value diversity and exhibit a caring, fair, and respectful attitude and respect toward all cultures;
4. Establish rapport with students, families, colleagues, and communities;
5. Meet obligations on time, dress professionally, and use language appropriately.

The Professional Education Board

To facilitate the college-wide mission of preparing principled leaders for professional education, The Citadel established the Professional Education Board (PEB). The Citadel PEB's primary focus is to foster academic environments that promote the development of principled leaders for the education profession and to facilitate the continuing improvement of professional education programs across the institution. In pursuing these goals, the PEB will concentrate on communication, assessment, and governance issues. The Citadel's Dean of the Zucker Family School of Education chairs the Board, which is comprised of representatives from all of The Citadel's professional education constituencies, including faculty, staff, students, and our P-12 colleagues. PEB members are appointed by the Dean of the School of Education in collaboration with the Deans of Humanities and Social Science,

of Science and Mathematics, and of The Citadel Graduate College. Beginning in September 2006, the Professional Education Board meets monthly during each academic year.

The School's Website

The Zucker Family School of Education has a diverse faculty with a wide array of teaching and research interests. Additional information on these interests, as well as other departmental highlights, initiatives and activities, can be viewed online: www.citadel.edu/education.

Admission Test Policy

Admission tests are required for all MAT and Counselor Education degree programs. The minimum acceptable score for admission for degree programs is a score of 396 on the Miller Analogies Test (MAT) or 290 (combined score on verbal and quantitative sections) on the Graduate Record Examination (GRE).

Provisional Status – Applicants for all MAT and Counselor Education degree programs who score between 380 and 395 on the MAT or between 283 and 289 on the GRE may apply for provisional status. A student accepted provisionally will have completed all admission requirements and will have been reviewed by the respective department. Once admitted the student must complete six semester hours and maintain a 3.50 GPA and then will be classified as degree-seeking status (see respective programs for additional requirements). Additionally, applicants for the MAT Secondary Education degree program with a GPA between 2.5 and 3.0 may be accepted on a provisional basis if all other criteria have been met. Students who score 379 or below on the MAT or 282 or below on the GRE will not be admitted. Admission tests must be current within five (5) years of application and official score sent directly to the CGC office at the request of the student.

Requesting a Waiver - Applicants for all MAT and Counselor Education degree programs who possess a master's degree or doctorate degree from a regionally accredited institution may request permission to waive the requirement to supply an admissions test score. An applicant must request the waiver in writing at the time of application from the appropriate academic program director.

LiveText Account

Zucker Family School of Education degree-seeking students (and those approved for certification only in counseling or educational leadership programs) must purchase a LiveText account at The Citadel's Bookstore. LiveText makes it possible for education students to have secure access to their portfolios and other important materials. Through LiveText, faculty members and administrators collect data, generate reports from the data, and use this information to make informed program and unit decisions.

Appeals Process

Education students who have extenuating circumstances may request to appeal policies by writing to the School's Admission, Retention, and Certification committees. Appeal letters should be addressed to the Dean of the School, who will direct it to either the Initial Programs Committee or the Advanced Programs Committee for recommendation. The committees' recommendations regarding appeals will be forwarded to the Dean of the School for final action.

Transfer Credit

No more than 12 hours may be transferred from other regionally accredited colleges or universities (e.g. Southern Association of Colleges, North Central Association of Colleges and Schools, etc.). Only graduate credit hours in which grades of "B" or higher have been earned are transferable. Some programs allow fewer hours of transfer credit. Students should check the requirements for specific programs for the maximum number of credit hours that may be transferred into his or her program at The Citadel. Please refer to CGC policy section for complete transfer credit details.

Master of Arts in Teaching (MAT) Secondary Education (Grades 7-12)

- Biology
- English
- Mathematics
- Social Studies

Zucker Family School of Education

843-953-5097

schoolofeducation@citadel.edu

www.citadel.edu/root/teacher-education

Content Area Advisors:

Biology:

Dr. Kristy Johnson, johnsonk1@citadel.edu

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Program Field Experiences, Internships and Support Services:

Dr. Tom Reilly, reillyt1@citadel.edu

Mission Statement

The Master of Arts in Teaching (MAT) program is designed for students seeking initial teacher certification in the fields of Biology and General Science, English Language Arts, Mathematics, Physical Education, or Social Studies. The program shares the philosophy and conceptual base of the Zucker Family School of Education: Preparing Principled Educational Leaders who are knowledgeable, reflective, and ethical. In addition, students must demonstrate an understanding of essential knowledge and its application to the classroom through field experiences and a professional internship. Some of those areas of knowledge include human development, education foundations and research, as well as an understanding of the academic content the student proposes to teach.

Admission Requirements

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of an official transcript of the baccalaureate degree and all other undergraduate or graduate work directly from each regionally accredited college and university.
3. Applicants are expected to have a 3.0 cumulative undergraduate grade point average. Applicants with a GPA between 2.5 and 3.0 may be accepted on a provisional basis if all other criteria are met.
4. Submission of the official Graduate Record Examination (GRE) or the Miller Analogies Test (MAT) scores. GRE minimum acceptable score is a verbal and quantitative combination of 290. MAT minimum is a raw score of 396. Admission test must have been taken within the last five (5) years. See page 77 for provisional status information.

Program Requirements

The program assumes a substantial undergraduate preparation in the proposed certification area. It is the responsibility of the student, and a requirement of the degree program, to submit official transcripts of previous academic work to the program advisors via The CGC office. Through a dual advisement system that includes content and education faculty, transcripts will be evaluated and a program of study will be developed for each student. Additional undergraduate course work may be required. The program of study will include work in professional education and a content field. At the outset, it should be recognized that programs of study are highly individualized based on the prior preparation of the teacher candidate, and hours for completion vary among students. Registration cannot take place until program of study is complete.

Prior to the internship in teaching, the teacher candidate must:

- Apply for the internship no later than two semesters prior to the Student Teaching Internship.
- Successfully complete all required field experiences – a minimum of 75 hours prior to the student teaching internship.
- Complete the teacher certification application via this website, <https://ed.sc.gov/educators/teaching-in-south-carolina/aspiring-educators/applying-for-certification/>, with state- required fees, social security card copy, and fingerprints for FBI/SLED background check.
- Be cleared by the South Carolina State Department of Education.
- Successfully complete the Praxis II Content Specialty Exam. Candidates are encouraged to take the specialty exam two semesters prior to beginning the internship. A passing score, using South Carolina standards (www.ets.org/praxis/prxsc.html), must be achieved prior to placement in the Professional Internship.
- The Praxis II Principles of Learning and Teaching (PLT) pedagogy exam is required prior to the issuance of an initial certificate. Candidates are encouraged to take the PLT exam upon completion of the following education courses: EDUC 500, EDUC 514, and 536.
- Negative TB test prior to the internship.
- MAT interns must successfully pass Red Cross Blood Borne Pathogens training prior to internship.

- MAT PE candidates must provide proof of current American Red Cross certification in First Aid and CPR prior to internship.
- Successfully complete 60 consecutive full days during the student teaching internship.

Successful completion of the approved program will qualify the student for a South Carolina teaching certificate/license in their chosen discipline and appropriate grade level(s).

Co-requisite: PSYC 500 - Human Growth and Development (or verifiable undergraduate preparation in psychology).

Core Education Requirements

It is recommended that the following courses be taken prior to any other professional education courses. Courses in the content field may be taken prior to or concurrent with this required core. (For Physical Education, see specific Professional Education Courses listed under that section.) Candidates should consult with their education advisor for course sequencing.

1. EDUC-500 Foundations of American Education (A minimum grade of B must be earned to move from pre-teacher education to teacher education.)
2. EDUC-514 The Exceptional Child in the School
3. EDUC-536 Educational Psychology
4. EDUC-512 Data Collection and Analysis
5. EDUC-588 Foundations of Literacy

Professional Education Methods Course Requirements

The professional requirement courses should be taken after the Core Education Courses have been completed. Content courses may be taken prior to or in conjunction with all of these courses except the Professional Internship. The student must recognize that the Professional Internship requires that a minimum of 60 full days be spent in the school. During the Internship, it will not be possible for the student to take any additional courses or be employed.

- EDUC-501 Methods and Materials of Middle and High School Teaching
- EDUC-592 Content Area Reading and Writing
- EDUC-520 Professional Internship

Content Area Preparation Requirements

Transcripts will be evaluated against the following list of required courses in the possible certification areas of the MAT program. Guidelines from the South Carolina State Department of Education, NASPE, NCSS, NCTE, NCTM, NMSA, and NSTA are used to determine courses for each program which students have taken in either graduate or undergraduate levels.

Each student is assigned an advisor from the School of Education and from the respective Content Area that he or she has chosen. Both advisors examine transcripts and develop a program of study for the student. To be eligible for the Student Teaching Professional Internship, program completion, and recommendation for licensure, in addition to education courses, students must have taken all of the content area courses below. Further, it is the responsibility of the teacher candidates to make sure that they have credit for prerequisites

for each required course. In the event that all of the following have been taken prior to matriculation into this program, the content area advisor will recommend additional graduate work in the content field for program completion.

Field Experiences and Clinical Practice/Internship Semester Expectations

As is expected for all South Carolina graduate teacher preparation programs, candidates in this program will spend a minimum of 75 hours in school settings prior to their internship semester participating in activities that range from focused observation to assisting small groups to teaching whole classes. These pre-internship experiences are an integral part of the core education courses. During the internship semester, teacher candidates in this program will spend 60 full days in a High School setting with content area certified teachers who are ADEPT trained.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

Master of Arts in Teaching – Biology (Grades 7-12)

Note: Along with required Education Courses listed above, completion of this degree program includes a minimum of 2 Graduate level Science courses from transcript analysis as well as Biology Methods – BIOL 605, 606, or 609.

Expected Science Content Area Required Courses:

- Behavior of Organisms and their Relationship to Social Systems (one course): ANTH-201, ANTH-202, or ANTH-501
- Biology Survey with lab (two courses): BIOL-101 with BIOL 111 **and** BIOL-102 with BIOL-112 or BIOL-130 with BIOL 140 **and** BIOL-131 **and** BIOL-141
- Chemistry with lab (two courses): CHEM-103 with CHEM-113 **and** CHEM-104 with CHEM-114 or CHEM-151 with CHEM-161 **and** CHEM-152 with CHEM-162
- Geology with lab (one course): EART-201 or EDUC-587-Introduction to Earth Science for Teachers
- Introduction to Physics with lab (one course required, two recommended) PHYS-203 **and** PHYS-253 or PHYS-204 **and** PHYS-254 or PHYS-221**and** PHYS-271 or PHYS-222 **and** PHYS-272
- Cell Biology with lab (one course): BIOL-205 or BIOL-612
- Ecology with lab (one course): BIOL-406 or BIOL-506
- Evolution (one course): BIOL-208 or BIOL-601
- Genetics with lab (one course): BIOL-204 or BIOL-308 or BIOL-508
- Anatomy/Physiology with lab (one course): BIOL-403 or BIOL-317 with BIOL-327 or BIOL-318 with BIOL-328 or BIOL-502 or BIOL-603
- Microbiology with lab (one course): BIOL-290 or BIOL-607
- Biology Methods (one course): BIOL-605 Laboratory Methods in Biology or BIOL-606 Field Methods in Biology or BIOL-609 Seminar in Environmental Science

*Two other graduate level Biology courses in addition to a Biology Methods course should be chosen if all science content course requirements were met in the undergraduate program.

Master of Arts in Teaching – English (Grades 7-12)

Note: A minimum of four graduate level English courses is required. ENGL-564 and 595 and at least two of the other courses listed below must be completed successfully on the graduate level. Each candidate's content area program of studies is based on an analysis of his or her undergraduate transcript in relation to NCTE/CAEP standards.

English Language Arts Content Area Requirements:

- British Authors (two courses): ENGL-201 and ENGL-202
- American Literature (one course): ENGL-215
- Public Speaking (one course): ENGL-205 or ENGL-206
- World Literature (two courses): ENGL-218 or ENGL-520 and ENGL-219 or ENGL-521
- African American Literature (one course): ENGL-535
- Adolescent Literature (one course): ENGL-552
- Modern English Grammar (one course): ENGL-414 or ENGL-553
- History of the English Language (one course): ENGL-415 or ENGL-554
- Literary Criticism (one course): ENGL-555
- Film Studies (one course): ENGL-209 or ENGL-560
- Advanced Composition (one course): ENGL-413 or ENGL-562
- Teaching with Technology (one course): ENGL-564
- Methods and Materials for English Language Arts (one course): ENGL-595

For MAT English majors, participation in community arts and humanities functions and documentation of integration of the arts into lesson plans created for use in K-12 settings (EDUC 501, 592, 595, and 520) are mandatory.

Master of Arts in Teaching – Mathematics (Grades 7-12)

Note: Teacher candidates are expected to complete undergraduate content requirements as advised by mathematics content advisors based on transcript analysis. Calculus I and II must be completed prior to enrolling in any graduate mathematics class.

Math Content Area Requirements:

- Analytical Geometry & Calculus I: MATH-131 or equivalent
- Analytical Geometry & Calculus II: MATH-132 or equivalent
- Analytical Geometry & Calculus III: MATH-231 or equivalent
- Linear Algebra: MATH-240
- MATH-521 Modern Geometry
- MATH-542 Probability and Statistics
- MATH-514 Methods for Middle/Secondary Mathematics
- MATH-545 Applications of Discrete Mathematics
- MATH-532 Modern Algebra

Master of Arts in Teaching – Social Studies (Grades 7-12)

Note: At least three of the course requirements listed below must be completed successfully on the graduate level.

Social Studies Content Area Requirements:

- History of World Civilization or Western Civilization (two courses): HIST-105 and HIST-106 or HIST-103 and HIST-104
- Survey of U.S. History (two courses): HIST-201 and HIST-202
- Introduction to Sociology (one course): SOCI-201
- Principles of Macroeconomics (one course): BADM-201
- American National Government (one course): PSCI-102 or PSCI-502
- Cultural Anthropology (one course): ANTH-202 or ANTH-501
- Historiography (one course): HIST-594
- Urban Politics (one course): PSCI-302 or PSCI-509 or PSCI-306 or PSCI-506 or PSCI-307 or PSCI-401
- World Geography (one course): GEOG-209 or GEOG-511
- History of the Non-Western World (one course): HIST-560
- Methods and Materials of Social Studies: EDUC-587

Descriptions of courses are listed in the last section of this catalog.

Master of Arts in Teaching (MAT)

Middle Grades (Grades 5-8)

- English
- Mathematics
- Science
- Social Science

Zucker Family School of Education

843-953-5097, schoolofeducation@citadel.edu

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Content Area Advisors:

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Mathematics:

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Science:

Dr. Kristy Johnson, johnsonk1@citadel.edu

Social Science:

Dr. Katherine Grenier, grenierk@citadel.edu

Education Advisors:

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Dr. Tammy Graham, Program Coordinator,

tammy.graham@citadel.edu

Dr. Soo Joung Kim, soojoung.kim@citadel.edu

Program Field Experiences, Internships and Support Services:

Dr. Tom Reilly, reillyt1@citadel.edu

Mission Statement

The mission of this program is development of individuals who will teach Middle Grades who are knowledgeable about all aspects of the teaching- learning process and who are effective, ethical, and reflective educators prepared to assume leadership roles in the profession and community. The Citadel's Master of Arts in Teaching Middle Grades program is a joint program offered with the College of Charleston. Applicants should choose a home institution and apply through that Graduate School. Admission decisions are completed jointly. Candidates who wish to enroll in this program will take approximately half of their teacher preparation coursework at The Citadel and the other half at College of Charleston.

Admission Requirements

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of official transcript of the baccalaureate degree and all other undergraduate or graduate work directly from each regionally accredited college and university.
3. Applicants are expected to have a 2.5 cumulative undergraduate grade point average.
4. Submission of official Graduate Record Examination (GRE) or the Miller Analogies Test (MAT) scores. GRE minimum acceptable score is a verbal and quantitative combination of 290. MAT minimum is a raw score of 396. Admission test must have been taken within the last five years. See page 77 for provisional status information.
5. Submission of three letters of recommendation.

Program Requirements

Required Education Course: (three semester hours)

- Introduction to Educational Technology: EDFS 687 (CofC) or an Equivalent Educational Technology course
 - For English Candidates: Teaching with Technology ENGL 564 (The Citadel)
 - For Math Candidates: Mathematical Technology Resources for STEM Education (The Citadel) MATH 618 or Applications Across the Mathematics Curriculum with Technology (CofC) SMFT 516

--Completion of a program of study with content and education advisors upon acceptance. *Registration cannot take place until program of study is complete.*

Core Education Graduate Hours: (21 semester hours)

- Foundations of American Education (The Citadel): EDUC-500 or Social and Philosophical Foundations of Education (CofC): EDFS-652
- The Exceptional Child in School (The Citadel): EDUC-514 or Introduction to Exceptional Children (CofC): EDFS-710
- Creating Effective Learning Communities: EDEE 690 (CofC)
- Middle Grades Organization and Curriculum (CofC): EDEE-515
- Foundations of Literacy (The Citadel): EDUC-588 or EDEE 604 (CofC)

Middle Grades Practicum: (six semester hours, must be taken together at the same institution)

- Educational Psychology (The Citadel): EDUC-536
and
- Methods and Materials of Middle and High School Teaching (The Citadel): EDUC-501
or
- Human Growth and Development (CofC): EDFS-654
and
- Application of Methods and Materials in a Middle Level Field Grades 5-8 (CofC): EDMG-658

Literacy Skills

- Content Area Reading and Writing (The Citadel): EDUC-592

Culminating Professional Experiences in Middle School:

60 continuous full days during the internship, nine semester hours, must be taken together at the same institution. During the Internship, it will not be possible for the student to take any additional courses or be employed.

- Professional Internship (The Citadel): EDUC-520
and
- Transition to the Profession Seminar (The Citadel): EDUC-525
or
- Clinical Practice in Middle Grades (CofC): EDEE-699
and
- Transition to the Profession Seminar (CofC): EDMG-698

Prior to the Internship in Teaching, the Teacher Candidate must:

- Apply for the internship no later than two semesters prior to the Student Teaching Internship.
- Successfully complete all required field experiences – a minimum of 75 hours prior to the student teaching internship.
- Complete the teacher certification application with state- required fees, social security card copy, and fingerprints for FBI/SLED background check.
- Successfully complete the Praxis II Content Specialty Exam. Candidates are encouraged to take the specialty exam two semesters prior to beginning the internship. A passing score, using South Carolina standards (www.ets.org/praxis/prxsc.html), must be achieved prior to placement in the Professional Internship.
- The Praxis II Principles of Learning and Teaching (PLT) pedagogy exam is required prior to the issuance of an initial certificate. Candidates are encouraged to take the PLT exam upon completion of the following education courses: EDUC 500, EDUC 514, and EDUC 536.
- Be cleared by the South Carolina State Department of Education.
- Negative TB test.
- MAT interns must successfully pass Red Cross Blood Borne Pathogens training prior to internship.
- MAT PE candidates must provide proof of current American Red Cross certification in First Aid and CPR; must be submitted prior to the internship.
- Successfully complete 60 full days during the student teaching internship.
- Successful completion of the approved program will qualify the student for a South Carolina teaching certificate/license in their chosen discipline and appropriate grade level(s).

Middle Grades Content Preparation:

This program assumes substantial undergraduate preparation in the specific content area the person is seeking credentials. Any of the following undergraduate content area courses not taken prior to admission to the program are added to the candidate's minimum program completion hours.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

Master of Arts in Teaching – English (Grades 5-8)

Expected Undergraduate Content:

- Adolescent Literature (one course)
- World Literature (two courses)
- American Literature (one course)
- Media Studies (one course)
- Modern English Grammar (one course)
- Creative Writing (short story, poetry, etc.) (one course)

Required Graduate English Courses (12 semester hours):

- Teaching Writing in the Middle Grades (CofC): EDMG-657
- Methods and Materials of Teaching Middle and High School Language Arts (The Citadel): ENGL-595
- Instruction and Assessment of Older Literacies Learners (CofC): MTLA 678
- Reading: Literacy Assessment and Instruction (The Citadel): EDUC-590

Master of Arts in Teaching – Mathematics (Grades 5-8)

Expected Undergraduate Content:

- Algebra and Trigonometry (one course)
- Geometry (one course)
- Probability and Statistics (one course)
- Discrete Math (one course)

Note: All undergraduate mathematics prerequisites must be completed before taking The Citadel mathematics class, MATH-514.*

Required Graduate Mathematics Courses (nine semester hours):

- Introduction to Problem Solving (CofC): SMFT-510
- Methods for Teaching Middle/Secondary Mathematics (The Citadel): MATH-514*
- Applications Across the Mathematics Curriculum with Technology (CofC): SMFT-516

Master of Arts in Teaching – Science (Grades 5-8)

Expected Undergraduate Content:

Undergraduate preparation is expected in each of the following content areas: biology, chemistry, geology or earth science, and physics.

Required Graduate Science Courses - (nine semester hours):

- Nature of Science, Mathematics, and Science/Mathematics Education (CofC): EDFS-660
- Science methods course (The Citadel): one course based on prior preparation and experience
 - Laboratory Methods in Biology: BIOL-605
 - Field Method in Biology: BIOL-606
 - Seminar in Environmental Science: BIOL-609
- Recommended elective(s) to have preparation in all science areas (EDUC and BIOL are Citadel Courses and SMFT are CofC courses):
 - Earth Science for Teachers: EDUC 587 or SMFT-523
 - Topics in Botany for Teachers: BIOL 514 or SMFT-537
 - Atomic Theory of Matter from Lucretius to Quarks: SMFT-548
 - Applications of Physics for Teachers: How Things Work: SMFT-555
 - Genetics and Molecular Biology for Teachers: SMFT-639 or BIOL 508
 - Physics of Force and Motion for Teachers: SMFT-645
 - Determination of Structure and Matter: SMFT-647
 - Space Science for Teachers: SMFT-524

Master of Arts in Teaching – Social Studies (Grades 5-8)

Expected Undergraduate Content:

- World History or Western Civilization (two courses)
- US History (two courses)
- South Carolina History (one course)
- Anthropology or Sociology (one course)
- Microeconomics (one course)
- Political Science that covers American Govt. (one course)

Required Graduate Social Studies Courses (nine semester hours):

Two of the following based on transcript review:

- World Geography
- The American South
- South Carolina History
- Historiography and
- Historical Geography: GEOG-511, HIST-521, HIST-522, HIST-594, HIST-693
- Methods and Materials of Teaching Social Studies (The Citadel): EDUC 587

Descriptions of Citadel courses are listed in the last section of this catalog.

Master of Arts in Teaching (MAT) in Physical Education (Grades K-12)

Department of Health & Human Performance
843-953-5060
<http://www.citadel.edu/root/teacher-education>

Content Area Advisor:

Dr. Ryan Sacko, rsacko@citadel.edu

Education Advisors:

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Dr. Tammy Graham, tammy.graham@citadel.edu
Dr. Soo Joung Kim, soojoung.kim@citadel.edu

Physical Education Program Director

Dr. Tim Bott, bottt1@citadel.edu

Program Field Experiences, Internships and

Support Services:

Dr. Tim Bott, bottt1@citadel.edu
Dr. Tom Reilly, reillyt1@citadel.edu

Admission Requirements

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of an official transcript of the baccalaureate degree and all other undergraduate or graduate work directly from each regionally accredited college or university. **Applicants are expected to have a 2.5 cumulative undergraduate grade point average.**
3. Submission of official Graduate Record Examination (GRE) or the Miller Analogies Test (MAT) score. GRE minimum acceptable score is a verbal and quantitative combination of 290. MAT minimum is a raw score of 396. Admission test must have been taken within the last five years.
4. Completion of a program of study with their MAT-PE program advisor upon acceptance. Registration for classes cannot take place until Program of Study is complete.

Program Requirements

This is a 42 hour graduate program, of which, at least 33 hours must be completed at the graduate level. A maximum of twelve (12) hours of graduate courses may be transferred to The Citadel from other accredited colleges/universities. A maximum of nine (9) hours of undergraduate courses may be applied to coursework in the program. These nine hours may be substituted for three of the following courses: HESS 505, 525, 535, and 561. To qualify, these undergraduate courses must have been completed within the last three years with a grade of “B” or better. This program assumes a substantial undergraduate preparation in the proposed certification area. It is the responsibility of the student, and a requirement of the degree program to submit official transcripts of previous academic work to the program advisor via the CGC office. Through a dual advisor system that includes physical education and education faculty, transcripts will be evaluated and a program of study developed for each student. This program of study will include work in professional education and a content field.

In addition to regular admission requirements of the CGC, each MAT -PE student must successfully pass the PRAXIS II Examination, Physical Education: Content and Design. A passing score, using South Carolina standards, must be achieved prior to placement in the Professional Internship. Students are encouraged to discuss when to take the specialty exam with their PE advisor.

Prior to the internship in teaching, the teacher candidate must:

- Apply for the internship no later than two semesters prior to the Student Teaching Internship.
- Complete the teacher certification application with state-required fees, social security card copy, and fingerprints for FBI/SLED background check.
- Successfully complete the PRAXIS II Content Specialty Exam.
- Be cleared by the South Carolina State Department of Education.
- Successfully complete all required field experiences – a minimum of 75 hours prior to the student teaching internship.
- Submit negative TB test results.
- Successfully pass Red Cross Blood Borne Pathogens training prior to MAT internship.
- Submit proof of current American Red Cross certification in First Aid and CPR prior to the internship.

To graduate and be recommended for certification,

Teacher candidates must have a minimum grade point average of 3.0 and must have successfully completed the PRAXIS II (Principles of Learning and Teaching and Physical Education Content Knowledge) and any other certification tests for the State of South Carolina. The candidate must also successfully complete 60 consecutive full days during the student teaching internship. Completion of the approved program will qualify the student for a teaching license in physical education, grades K-12.

Prerequisites or Co-requisites:

Students must have completed these pre-requisite or co-requisite courses (undergraduate or graduate) within the last six (6) years with a grade of “C” or better.

- Biology (4) or Chemistry (4) or Physics (4) with laboratory
- Human Anatomy (4) and Human Physiology (4) or Anatomy/Physiology (8) (each course must include a laboratory)
- PSYC-500 Human Growth and Development (3) (or verifiable undergraduate preparation in psychology)

Transcripts will be evaluated against the following list of required courses in physical education. Guidelines from SHAPE America (CAEP) are used to determine courses that students take in either graduate or undergraduate school. The M.A.T. in Physical Education will require forty-two (42) hours. Each student is assigned an advisor from Physical Education as well as a School of Education Advisor. Both advisors examine transcripts and assist as candidates move through their program. Questions regarding sequencing of Physical Education courses should be directed to the Physical Education advisor. Education advisors are able to assist with questions related to EDUC courses as well as provide support as candidates prepare for the Praxis Principles of Learning and Teaching. To be eligible for the Student Teaching Professional Internship, program completion, and recommendation for licensure, students must have successfully met all of the requirements listed below.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

REQUIRED COURSES (42 credit hours)

EDUC-536	Educational Psychology
EDUC-592	Content Area Reading and Writing
HESS-505	Motor Development and Motor Learning*
HESS-525	Scientific Principles of Physical Education and Health, Exercise, & Sport Science*
HESS-547	Techniques of Conditioning for Sport and Physical Fitness
HESS-528	Foundations of Developing Literacy Skills through Content and Methods of Teaching Physical Education
HESS-533	Content and Methods of Teaching Elementary School Physical Education
HESS-534	Accommodating Persons with Disabilities in Sport & Physical Activity
HESS-535	History, Philosophy, and Curriculum of Physical Education*
HESS-550	Instructional Aspects of Teaching Physical Education
HESS-551	Content & Methods of Teaching Secondary Physical Education
HESS-561	Advanced Measurement and Evaluation in Physical Education*
HESS-620	Professional Internship (6 hours)

*Undergraduate and graduate transcripts may be evaluated for application to coursework in the program.

TOTAL PROGRAM REQUIREMENTS: 42 Credit Hours

Descriptions of Citadel courses are listed in the last section of this catalog.

Master of Education in Counselor Education (Elementary and Secondary)

Zucker Family School of Education

843-953-5097

schoolofeducation@citadel.edu

<http://www.citadel.edu/root/counselor-education>

Dr. Tara Hornor, tara.hornor@citadel.edu

Dr. Guy Ilagan, gilagan@citadel.edu

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Dr. George T. Williams, williamsg@citadel.edu

The Council for Accreditation of Counseling and Related Educational Programs (CACREP) has granted accreditation to The Citadel School Counseling Programs which offer Master of Education degrees in Counselor Education since July 2005. The current accreditation is effective until October 31, 2021.

Mission Statement

The mission of the Counselor Education Programs at The Citadel is to prepare elementary and secondary school counselors to have the knowledge, skills, and dispositions to be principled educational leaders who are knowledgeable, reflective, and ethical professionals, committed to the provision of an educational environment focused toward a learner-centered education.

The Division of Counselor Education offers seven program options including: M.Ed. in Elementary School Counseling, M.Ed. in Secondary School Counseling, Elementary School Counseling Certification only, Secondary School Counseling Certification only, M.Ed. in Higher Education Leadership, and Graduate Certificates in Student Affairs and Higher Education Leadership.

Admission Requirements

Applicants from diverse academic, social, and cultural backgrounds committed to advancing the profession of school counseling are encouraged to apply. Applicants who do not meet a specific requirement (e.g., GPA), but show strength in other requirements will be considered on an individual basis. Admission is not based on any single factor, but on a composite assessment of the application materials.

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of an official transcript directly from each regionally accredited college or university from which a degree has been earned. Applicants are expected to have a 3.0 cumulative undergraduate grade point average.

3. Submission of official Graduate Record Examination (GRE) or the Miller Analogies Test (MAT) scores. MAT minimum acceptable score of 396 or GRE minimum verbal and quantitative combined score of 290. Admission test must have been taken within the last five years. See page 77 for provisional status information.
4. Submission of a detailed personal statement (1,500 - 3,000 words) which informs the faculty about the applicant's personal and educational background, strengths and weaknesses, understanding of and motivation and suitability for entering into the counseling profession, and long-term professional goals.

Prior to meeting with an advisor, each student should become familiar with the current applicable semester's class schedule, The Citadel Graduate College catalog, and the Division of Counselor Education Handbook. Students are also expected to attend Counselor Education Town Hall Gatherings each semester.

Students must be initially advised in order to register and to plan a schedule for completion of required courses. This plan of study takes into account the prerequisites and sequencing of coursework for successful completion of the program.

Coursework taken prior to official program admission or coursework taken in other programs does not count toward the school counseling program/degree without written approval from the faculty advisor and the Dean of the School of Education. Students who hold full-time employment should not register for more than 6 semester hours in any given term.

All school counseling students (i.e., degree seeking and certification only seeking) must purchase a LiveText account at The Citadel's Bookstore. LiveText makes it possible for school counseling students to have secure access to their portfolios and other materials. Through LiveText, faculty members and administrators collect data, generate reports from the data, and use this information to make informed program and unit decisions.

Admission Requirements for Certification Only

Applicants who hold a master's degree in another area of professional education or counseling, but wish to add school counseling certification (elementary or secondary), must provide the same admission materials.

Division of Counselor Education Handbook

All prospective and enrolled School Counseling and College Student Affairs Specialists students are expected to read the latest edition of The Citadel, School of Education, Division of Counselor Education Handbook online at: <http://www.citadel.edu/root/counselor-education-programs/med-counselor-education> under "Forms and Handbooks".

Program Objectives

1. Reflect current knowledge and positions from lay and professional groups concerning the counseling and human development needs of a pluralistic society;
2. Reflect the present and projected needs of a pluralistic society for which specialized counseling and human development activities have been developed;
3. Reflect input from all persons involved in the conduct of the program, including program faculty, current and former students, and personnel in cooperating agencies;
4. Are directly related to program activities; and
5. Are written so that they can be assessed.

Graduates of the Counselor Education Programs are expected to possess:

- An understanding of counseling as an intervention that contributes to the ability of individuals to respond effectively to developmental issues and tasks;
- An understanding of leadership for learner-centered education as a conceptual framework;
- An understanding of the counseling process;
- An ability to integrate theory and research into practice;
- A commitment to preventive, developmental approaches as the keystone of school counselor identity and practice;
- An understanding of how historical, philosophical, and political influences have shaped and affected the development of counseling practice;
- Effective oral and written communication skills;
- Skills to work in a rapidly changing and diverse society including differences as gender, age, socioeconomic status, ethnicity, race, and religion;
- Skills required to work effectively with students' parents, teachers, school staff, and the community;
- An ability to assist clients in responding to stresses and crises generated by changes in family, personal relationships, the school, and the community;
- Skills needed to effectively use technology;
- Leadership qualities in education at the local, state, regional, and national levels;
- A commitment to lifelong personal and professional development; and
- An ability to model the highest professional and ethical standards through counseling, guidance, research, and service.

The School Counseling Programs have also been designed to produce graduates who are able to demonstrate the competencies identified in The South Carolina System for Assisting, Developing, and Evaluating Professional Teaching (ADEPT) Performance Dimensions (PDs) for School Guidance Counselors (October 2003) as they relate to "Comprehensive Developmental Guidance and Counseling" that include:

- APS 1: Long-Range Planning
- APS 2: Short-Range Planning of Guidance and Counseling Activities
- APS 3: Development and Use of Assessments
- APS 4: Providing Guidance and Counseling Services
- APS 5: Providing Consultation Services
- APS 6: Coordinating Guidance and Counseling Services

- APS 7: Professional Responsibilities

Counselor Education Program Requirements

Students in either the elementary or secondary school counseling program complete both a School of Education core and a Counseling core for a total of 51 credit hours. Part of the coursework includes a 600 clock-hour internship (internship I and II) in either an elementary (K-8) or a secondary (6-12) school counseling settings. Students are required to earn a minimum score of 156 on the PRAXIS II (the Professional School Counselor) test for guidance and counseling prior to enrolling in the practicum (EDUC-629). This must be on file at The Citadel Graduate College.

Transfer of Credits

Counselor Education M.Ed. degree applicants may transfer a maximum of 12 credit hours of graduate coursework taken at other regionally accredited institutions (see School of Education transfer policy).

Field Experience Requirements

Counselor Education students must formally request permission from the faculty advisor or clinical coordinator to enroll in practicum or internship. This request is submitted in the form of an application for field experience, which must be completed during the term prior to the field experience. The clinical coordinator of the field experiences must approve all field experience applications, which are due by the last Friday in September for spring placements and by the last Friday in January for fall placements.

Practicum is the first extended field experience. Students are placed in a school site and work under the supervision of a site supervisor as well as The Citadel instructor. Students are required to spend a minimum of 100 clock-hours in a public school setting as well as attend weekly seminars with other practicum students and The Citadel instructor. Additionally, the Praxis II test score for Professional School Counselor must be on file at the office for The Citadel Graduate College prior to application for a practicum placement.

Counselor Education students must complete all coursework before placement in an internship setting. Students will be required to spend a minimum of 600 supervised hours in a school setting for internship. The focus of the internship is on experiences that involve the full scope of the school counselor's role and function. Interns are expected to continue the development of skills in individual and group intervention, participate in classroom guidance, assessment, scheduling, records and other activities that, while not specifically counseling-related, are necessary to support the school counseling and guidance program. Interns are supervised by the field site supervisor, as well as The Citadel instructor.

Requirements for Graduation

Students pursuing M.Ed. degrees in Counselor Education must complete all course requirements within a 6-year period from the date of initial enrollment. It is a student's responsibility to initiate a meeting with a faculty advisor to modify a study plan schedule and to have any changes documented in writing with the faculty advisor's signature.

Students are required to take the Counselor Preparation Comprehensive Examination (CPCE) while enrolled in the Internship I course (i.e., EDUC-650 and EDUC-651). Students considering becoming a Licensed Professional Counselor (LPC) are encouraged to take the CPCE and earn a passing score determined by The Citadel Counselor Education program norms.

Elementary and Secondary School Counseling students are required to present their professional electronic portfolio at the end-of-the-semester Counselor Education Professional Portfolio Presentation Day(s) prior to completion of the Internship II course (i.e., EDUC-652 and EDUC-653).

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

ELEMENTARY AND SECONDARY SCHOOL COUNSELING (51 Credit Hours)

SCHOOL OF EDUCATION CORE (15 Credit Hours)

- PSYC-500 Human Growth and Development
EDUC-500 Foundations of American Education
EDUC-514 The Exceptional Child in the Schools
EDUC-522 Critical Educational Issues in a Multicultural Society
EDUC-592 Content Area Reading and Writing

ELEMENTARY AND SECONDARY SCHOOL COUNSELOR EDUCATION CORE (36 Credit Hours)

Foundations (18 Credit Hours)

- EDUC-515 Introduction to the Counseling Profession
EDUC-521 Program Planning, Management, and Evaluation in School Counseling
EDUC-550 Career Counseling and Development
EDUC-551 Counseling Theories and Practice
EDUC-552 Group Counseling
EDUC-561 Counseling Diverse Populations

Research/Appraisal (6 Credit Hours)

- EDUC-512* Data Collection and Analysis
EDUC 549* Applied Measurement Techniques

*Students are expected to complete at least one of these two courses in the first 18 hours of the program.

Helping Relationships (12 Credit Hours)

- EDUC-624 Basic Counseling Skills
EDUC-629 Practicum in School Counseling
EDUC-650* Elementary School Counseling Internship I
and
EDUC-652 Elementary School Counseling Internship II
or
EDUC-651* Secondary School Counseling Internship I
and
EDUC-653 Secondary School Counseling Internship II

*The internship (i.e., Internship I and II) in school counseling consists of 16 weeks of full-time placement and a total of 600 clock hours. Internships may be arranged with the faculty advisor to be completed during two sequential academic semesters. Students choosing to complete an internship in one semester, register for both Internship I and II (i.e., either EDUC 650 and EDUC 652 or EDUC 651 and EDUC 653) while students completing an internship in two semesters, first register for Internship I one semester and Internship II the following semester.

TOTAL PROGRAM REQUIREMENTS: 51 Credit Hours

Descriptions of courses are listed in the last section of this catalog.

Licensed Professional Counselor (LPC) National Certified Counselor (NCC)

School Counseling students completing the program meet the majority of curriculum requirements through the South Carolina Board of Examiners for the Licensure of Professional Counselors, Marriage and Family Therapists, and Psycho-Educational Specialists for Licensed Professional Counselor (LPC) and for certification as a National Certified Counselor (NCC) by the National Board for Certified Counselors (NBCC). Requirements for LPC and NCC include additional graduate coursework in psychopathology and assessment and treatment of psychopathology, an additional 1500 clinical hours (including 150 supervision hours) over a two year period, approved supervision, and successful performance on the National Counselor Examination for licensure and certification. The Zucker Family School of Education offers two courses during the summer that meet the psychopathology and assessment and treatment of psychopathology course requirements: These courses are EDUC-568: DSM-5 (diagnosis) and EDUC-567: Assessment of Abnormal Behavior (assessment and treatment of psychopathology).

ADDITIONAL COURSES FOR SEEKING LICENSED PROFESSIONAL COUNSELOR (LPC) (12 Credit Hours)

EDUC-XXX	Elective approved by faculty advisor
EDUC-567	Assessment of Abnormal Behavior
EDUC-568	DSM-5
PSYC-500	Human Growth and Development

Master of Education in Educational Leadership - Elementary or Secondary School Administration and Supervision

Zucker Family School of Education

843-953-5097

www.citadel.edu/root/educational-leadership

Dr. Lee Westberry, Program Coordinator,

lwestber@citadel.edu

Dr. Kent Murray, kent.murray@citadel.edu

The Zucker Family School of Education's Administration and Supervision programs are nationally accredited by the Council for the Accreditation of Educator Preparation (CAEP) and the Educational Leadership Constituent Council (ELCC) to confer Master's Degrees in Elementary and Secondary Administration. At program completion, candidates will be eligible for South Carolina licensure as school building administrators. Accreditation, for the Administration and Supervision programs accreditation, is effective through October 31, 2021.

Mission Statement

The mission and goals of the Master of Education in Educational Leadership, Elementary School Administration and Supervision and Secondary Administration and Supervision are to teach:

- Knowledge of human and public relations problems in education
- Curricular developments and trends
- Practical applications of educational research skills
- Application of principles of human and group behavior in problem situations
- Knowledge and competencies in staff personnel administration
- Leadership and diverse management styles to foster a clear understanding and working knowledge of Learner-Centered Education

Admission Requirements

1. Applicants must complete the online graduate application and pay the non-refundable application fee.
2. Applicants must provide official transcripts from the highest undergraduate or graduate degree conferred from each regionally accredited college or university.
3. Applicants, who have not earned a Master's Degree, are expected to have a 2.5 cumulative undergraduate grade point average or a 2.7 ratio for the last 60 credit hours of undergraduate work.

4. Submission of a valid South Carolina elementary or secondary professional teaching certificate and must be in good standing with the State Board of Education at the time of admission.
5. Applicants must submit a copy of the South Carolina Professional Certificate, verifying three-years teaching experience to qualify for Advanced-Level certification. The candidate must verify at least one year of teaching experience, at the appropriate level of desired endorsement, at the time of admission.

Admission Requirements for South Carolina Certification Only

Applicants who hold a valid SC teaching certificate and a Master's Degree with a minimum 3.25 GPA in a different area of professional education but wish to add administration certification must provide the following admission materials:

1. A completed online graduate application and payment of the non-refundable application fee.
2. Applicants must provide official transcripts of earned graduate degrees conferred from each regionally accredited college or university.
3. Submission of a valid South Carolina elementary or secondary professional teaching certificate. Applicants must be in good standing with the State Board of Education at the time of admission.
4. Applicants must submit a copy of a South Carolina Professional Certificate, verifying three years teaching experience, to qualify for Advanced-Level certification. The candidate must verify at least one year of teaching experience, at the appropriate level of desired endorsement, at the time of admission.

Note: Courses taken prior to official admission or courses taken through other programs will not count toward an Administration and Supervision program/degree without written approval from the Dean, Zucker Family School of Education.

Program Requirements

A total of 39 semester hours must be completed for the M.Ed. in Educational Leadership. In addition to completing all courses, candidates applying for certification as an administrator must:

1. Present a minimum qualifying score on the Praxis, South Carolina's Supervision and Administration Examination, prior to enrolling in an internship.
2. Present a Valid South Carolina Teaching Certificate that posts three years teaching experience including at least one year of teaching at the certification level requested.
3. Complete required courses, 33 hours and two internships (EDUC 661 and EDUC 662 or EDUC 663 and EDUC 664), six hours (9-12 internship hours per week over a six-month period) for a total of 39 credit hours. Candidates for administrative internships must:
 - a. Complete 27 credit hours prior to submitting an internship application for faculty review.
 - b. Earn a passing score on the Praxis, South Carolina's

Supervision and Administration Examination.

- c. Meet with advisor to review request for admission to an internship and review degree audit.
- d. Apply to CGC to register for an internship.

Applicants for fall administrative internships should file an application with their advisor no later than August 1 of the preceding semester. Applicants for spring administrative internships should file an application with their advisor no later than December 1 of the preceding semester. Applicants for summer administrative internships should file an application with their advisor no later than March 1 of the preceding semester. In order to register for internships, authorized applications must be on file in the CGC office, along with the valid South Carolina state administrator's examination score.

*Proviso—Candidates filing applications and applying for administrative internships after the December, March, and August deadlines cannot be guaranteed enrollment.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

M.Ed. REQUIRED PROGRAM

CORE REQUIREMENTS (nine credit hours)

All core requirements must be completed prior to or concurrently with registration for any other courses.

- EDUC-512 Data Collection and Analysis
- EDUC-514 The Exceptional Child in the School
- EDUC-522 Critical Educational Issues in a Multicultural Society

PROFESSIONAL REQUIREMENTS (30 credit hours)

- EDUC-524 Techniques of School Supervision
- EDUC-527 Finance and Business Management
- EDUC-528 School Administration
- EDUC-529 Emerging Technologies for School Administration
- EDUC-531 Principles of Elementary Curriculum Development
- OR
- EDUC-532 Principles of Middle or High Curriculum Development
- EDUC-601 School Law
- EDUC-602 Staff Personnel Administration
- EDUC-616 Political Process of Public Education
- EDUC-661 Internship in Elementary Administration
- OR
- EDUC-663 Internship in Middle or High Administration
- EDUC-662 Internship in Elementary Administration
- OR
- EDUC-664 Internship in Middle or High Administration

TOTAL REQUIRED COURSES: 39 Credit Hours

Descriptions of courses are listed in the last section of this catalog.

CERTIFICATION-ONLY REQUIRED PROGRAM

PROFESSIONAL REQUIREMENTS (30 credit hours)

- EDUC-524 Techniques of School Supervision
- EDUC-527 Finance and Business Management
- EDUC-528 School Administration
- EDUC-529 Emerging Technologies for School Administration
- EDUC-531 Principles of Elementary Curriculum Development
- OR
- EDUC-532 Principles of Middle or High Curriculum Development
- EDUC 601 School Law
- EDUC-602 Staff Personnel Administration
- EDUC-616 Political Process of Public Education
- EDUC-661 Internship in Elementary Administration
- OR
- EDUC-663 Internship in Middle or High Administration
- EDUC-662 Internship in Elementary Administration
- OR
- EDUC-664 Internship in Middle or High Administration

TOTAL CERTIFICATION-ONLY COURSES: 30 Credit Hours

Descriptions of courses are listed in the last section of this catalog.

Note: It is suggested that students who hold full time jobs take no more than six (6) credit hours per a semester.

REQUIREMENTS FOR INITIAL CERTIFICATION AT THE ADVANCED LEVEL

I. ADMINISTRATION

- A. Elementary or Secondary School Principal and Supervisor (Tier 1)
 1. Master's degree
 2. Valid South Carolina Educator's Profession I Certificate at the elementary or secondary level
 3. Minimum qualifying score(s) on the area examinations required by the State Board of Education
 4. Verification of three years teaching experience, including at least one year of teaching in grades pre-K-8 for elementary, 7-12 for secondary
 5. Completion of an advanced program approved by the State Board of Education for the training of elementary or secondary principals and supervisors South Carolina Regulation 43-64

Transfer of Credits

Candidates who apply to transfer credits from other regionally accredited institutions (see School of Education transfer policy), to the Zucker Family School of Education's Administration and Supervision programs may transfer a maximum of six credit hours, two courses, of graduate coursework.

Capstone Internship Requirements

Educational Leadership candidates must formally request permission from the faculty advisor to enroll in a capstone internship. Candidates must be within two courses of the internship and have earned a passing score on the Administration and Supervision PRAXIS to apply. This request is submitted in the form of an application which must be completed prior to the internship courses: EDUC-661/662 or EDUC-663-664. The Division of Educational Leadership must approve all field experience applications.

Master of Education in Higher Education Leadership

Zucker Family School of Education

843-953-5097

schoolofeducation@citadel.edu

<http://www.citadel.edu/root/counselor-education>

Dr. Tara Hornor, tara.hornor@citadel.edu

Dr. Guy Ilagan, gilagan@citadel.edu

Dr. Aaron H. Oberman, Program Coordinator

aaron.oberman@citadel.edu

Dr. George T. Williams, williamsg@citadel.edu

Mission Statement

The mission of the Counselor Education Programs at The Citadel is to prepare elementary and secondary school counselors, college student affairs specialists, and higher education leaders to have the knowledge, skills, and dispositions to be principled educational leaders who are knowledgeable, reflective, and ethical professionals, committed to the provision of an educational environment focused toward a learner-centered education.

The Division of Counselor Education offers seven program options including: M.Ed. in Elementary School Counseling, M.Ed. in Secondary School Counseling, Elementary School Counseling Certification only, Secondary School Counseling Certification only, M.Ed. in Higher Education Leadership, and Graduate Certificates in Student Affairs and Higher Education Leadership.

Admission Requirements

Applicants from diverse academic, social, and cultural backgrounds committed to advancing the higher education field are encouraged to apply. Applicants who do not meet a specific requirement (e.g., GPA), but show strength in other requirements will be considered on an individual basis. Admission is not based on any single factor, but on a composite assessment of the application materials.

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of an official transcript directly from each regionally accredited college or university from which a degree has been earned. Applicants are expected to have a 3.0 cumulative undergraduate grade point average.

3. Submission of official Graduate Record Examination (GRE) or the Miller Analogies Test (MAT) scores. MAT minimum acceptable score of 396 or GRE minimum verbal and quantitative combined score of 290. Admission test must have been taken within the last five years. See page 77 for provisional status information.
4. Submission of a detailed personal statement (1,500 - 3,000 words) which informs the faculty about the applicant's personal and educational background, strengths and weaknesses, understanding of and motivation and suitability for entering into the counseling profession, and long-term professional goals.

Prior to meeting with an advisor, each student should become familiar with the current applicable semester's class schedule, The Citadel Graduate College catalog, and the Division of Counselor Education Handbook. Students are also expected to attend Counselor Education Town Hall Gatherings each semester.

Students must be initially advised in order to register and to plan a schedule for completion of required courses. This plan of study takes into account the prerequisites and sequencing of coursework for successful completion of the program.

Coursework taken prior to official program admission or coursework taken in other programs does not count toward the school counseling program/degree without written approval from the faculty advisor and the Dean of the School of Education. Students who hold full-time employment should not register for more than 6 semester hours in any given term.

All higher education students must purchase a LiveText account at The Citadel's Bookstore. LiveText makes it possible for higher education students to have secure access to their portfolios and other materials. Through LiveText, faculty members and administrators collect data, generate reports from the data, and use this information to make informed program and unit decisions.

Division of Counselor Education Handbook

All prospective and enrolled Higher Education Leadership students are expected to read the latest edition of The Citadel, School of Education, Division of Counselor Education Handbook online at: <http://www.citadel.edu/root/counselor-education-programs/med-counselor-education> under “Forms and Handbooks”.

Program Objectives

1. To provide students with theoretical and practical knowledge essential to understanding the variety of leadership roles within higher education settings.
2. To instill the ethical and professional values essential to work within the field of higher education.
3. To provide students with practical experiences in the development of their skills as leaders.
4. To instill in students the value of lifelong learning and a desire for continuous professional improvement and renewal.
4. Are directly related to program activities; and
5. Are written so that they can be assessed.

Graduates of the Higher Education Programs are expected to possess:

- An understanding of how historical, philosophical, and political influences have shaped and affected the development of higher education professional practice;
- An understanding of leadership for learner-centered education as a conceptual framework;
- An ability to integrate theory and research into practice;
- An understanding of the counseling process;
- Effective oral and written communication skills;
- Skills to work in a rapidly changing and diverse society including differences as gender, age, socioeconomic status, ethnicity, race, and religion;
- Skills required to work effectively with students, faculty and staff, administrators, and the community;
- An ability to assist students in responding to stresses and crises generated by changes in family, personal relationships, the school, and the community;
- Skills needed to effectively use technology;
- Leadership qualities in education at the local, state, regional, and national levels;
- A commitment to lifelong personal and professional development; and
- An ability to model the highest professional and ethical standards through professional practice, research, and service.

Higher Education Leadership Program Requirements

Students enrolled in the Master of Education in Higher Education Leadership degree program complete the Higher Education Leadership Core and College Counselor Education Courses for a total of 36 credit hours.

Students enrolled in the Graduate Certificate in Student Affairs complete only four courses (EDUC-537, EDUC-538, EDUC- 539, and EDUC-613) focusing on the areas of student services, student development, historical and contemporary aspects of higher education, and administration. Students have the option to complete course EDUC-634—Practicum in Student Affairs and College Counseling. Students enrolled in the Graduate Certificate in Higher Education Leadership complete only four courses (EDUC-539, EDUC-530, EDUC- 533, and EDUC-534) focusing on the areas of administration, higher education finance, strategic planning and assessment, and leadership. The majority of these courses are also required of the MEd in Higher Education Leadership degree program. However, students considering applying to the MEd in Higher Education Leadership program will need to meet the admissions requirements before being accepted into the program. (See Graduate Certificate section for details.)

Transfer of Credits

Higher Education Leadership M.Ed. degree applicants may transfer a maximum of 12 credit hours of graduate coursework taken at other regionally accredited institutions (see School of Education transfer policy).

Field Experience Requirements

Higher Education Leadership students must formally request permission from the faculty advisor or clinical coordinator to enroll in practicum or internship. This request is submitted in the form of an application for field experience, which must be completed during the term prior to the field experience. The clinical coordinator of the field experiences must approve all field experience applications, which are due by the last Friday in September for spring placements and by the last Friday in January for fall placements.

Practicum is an extended field experience designed for students already working at an advanced level in higher education. Students work under the supervision of a site supervisor as well as The Citadel instructor. Students are required to spend a minimum of 100 clock-hours in a higher education setting, complete a course project, as well as attend weekly seminars with other practicum students and The Citadel instructor.

Higher Education Leadership students must complete all coursework before placement in an internship setting. Students will be required to spend a minimum of 300 supervised hours in a higher education setting for internship. Interns are supervised by the field site supervisor, as well as The Citadel instructor.

Requirements for Graduation

Students pursuing the M.Ed. in Higher Education Leadership must complete all course requirements within a 6-year period from the date of initial enrollment. It is a student's responsibility to initiate meeting with a faculty advisor to modify a study plan schedule and to have any changes documented in writing with the faculty advisor's signature

Higher Education Leadership students are required to present their professional electronic portfolio at the end-of-the-semester Counselor Education Professional Portfolio Presentation Day(s) during their last semester in the program.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

HIGHER EDUCATION LEADERSHIP (36 Credit Hours)

STUDENT AFFAIRS AND COLLEGE COUNSELING CORE (27 Credit Hours)

EDUC-512	Data Collection and Analysis
EDUC-537	Student Development Services in Higher Education
EDUC-539	Higher Education Administration
EDUC-550	Career Counseling and Development
EDUC-551	Counseling Theories and Practice
EDUC-562	Legal & Ethical Leadership Issues in Education
EDUC-613	Foundations of American Higher Education
EDUC-622	Critical Multicultural Issues in Higher Education
EDUC-624	Basic Counseling Skills

ELECTIVES (6 Credit Hours)

EDUC-530	Strategic Planning and Assessment in Higher Education
EDUC-533	Higher Education Finance
EDUC-534	Advanced Leadership in Higher Education
EDUC-538	Theories of Student Development in Higher Education

FIELD EXPERIENCE (3 Credit Hours)

EDUC-634	Practicum in Higher Education Administration
EDUC-635	Practicum in Higher Education Student Affairs
EDUC-655	Internship in Higher Education Administration*
EDUC-656	Internship in Higher Education Student Affairs*

* The internships in Higher Education Administration and Higher Education Student Affairs consists of 16 weeks of part-time placements and a total of 300 clock hours. Internships may be arranged with the faculty advisor to be completed during two sequential academic semesters or both courses may be taken concurrently in one semester.

TOTAL PROGRAM REQUIREMENTS: 36 Credit Hours

Descriptions of courses are listed in the last section of this catalog.

Master of Education in Interdisciplinary STEM Education

Zucker Family School of Education, 843-953-5097
The STEM Center of Excellence, 843-953-6091
www.citadel.edu/root/stemcenter-medstem

Dr. Jennifer Albert, Program Coordinator
jalbert@citadel.edu

Mission Statement

The Master of Education in Interdisciplinary STEM Education is **entirely online** and is designed for current educators who seek to advance their skillset in the STEM disciplines. The goal of the program is to create 21st century STEM educators and leaders by facilitating a broader understanding of the interdisciplinary nature of STEM, a deeper knowledge of discipline-specific content, and new integrative approaches for the teaching and learning of STEM content.

The coursework has been designed to inspire a passion in teachers for STEM and equip them with the tools necessary to teach STEM content in an engaging way with career and industry applications. **The MEd in Interdisciplinary STEM Education does not lead to certification**, but is instead designed to improve teacher effectiveness in STEM education. A graduate successfully completing this degree program will be adept at creating relevant projects for use in their classrooms and utilizing project-based instructions to more effectively engage their students in the STEM disciplines.

Admission Requirements

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of an official transcript of the baccalaureate degree and all other undergraduate and graduate work directly from each regionally accredited college or university. Applicants are expected to have a 2.5 cumulative undergraduate grade point average.
3. A bachelor's degree demonstrating appropriate preparation in STEM.
4. Students must meet with their advisor for program advisement and course sequence planning. This advisement meeting must take place before registration can occur for the first semester of enrollment.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light
- The Citadel Principled Leadership Seminar – LDRS 500

Program Requirements

The program assumes appropriate undergraduate preparation in STEM. The 34-credit hour MEd in Interdisciplinary STEM Education is organized into two areas - core and electives. The coursework will consist of nineteen (19) hours of core coursework and fifteen (15) hours of electives. Students will work with academic advisors to individualize the program based on their prior preparation and areas of interest. The curriculum is targeted for working professionals with coursework delivered online in asynchronous format, allowing students to progress through the program at their own pace.

Although the program is designed for current educators, **teaching certification is not required to be admitted to the program** as other STEM professionals may complete the degree to better prepare themselves for roles in places such as informal education centers.

CORE COURSES (19 credit hours)

EDUC-543	Teaching, Learning and Assessing with Technology
EDUC-544	Project Based Learning and Interdisciplinary Teaching
EDUC-545	Developing STEM Disciplinary Literacy Skills
EDUC-546	Leadership and Critical Issues in STEM Education
EDUC-547	Research and Statistics for STEM Applications
EDUC-670	Foundations in STEM I
EDUC-680	Foundations in STEM II

ELECTIVE COURSES (15 credit hours)

Students will select 5 (five) elective courses, chosen from the following list or as approved by program faculty.

BIOL-540	Biotechnology for STEM Educators
BIOL-610	Immunology (must have undergraduate preparation in Cell Biology and Genetics)
CHEM-520	The Chemistry of Art
CHEM-521	Forensic Science
CHEM-522	Nanotechnology for STEM Educators
CSCI-555	STEM Education Through Robotics
CSCI-663	Programming for STEM Educators
EDUC-548	Special Topics: Multidisciplinary Experimental Design and Implementation
EDUC-587	Earth Science for Teachers
EDUC-587	Special Topics: The Science of Food for Educators
MATH-618	Mathematical Technology Resources for STEM Education
PHYS-510	Engineering Applications in STEM

Other face to face options are available in conjunction with The Citadel Graduate College's offerings. Please check with the program coordinator for approval.

THE CAPSTONE

Embedded in the coursework is a capstone. Students will prepare an online portfolio that captures evidence of achievement. The Portfolio will consist of their developed project-based lessons, an analysis of lesson implementation, and statistical analysis of student impact. A panel of instructors will review student's work and evaluate their capstone project.

TOTAL PROGRAM REQUIRED COURSES: 34 Credit Hours

Description of courses are listed in the last section of this catalog.

Master of Education in Literacy Education

Zucker Family School of Education

843-953-5097

www.citadel.edu/root/literacy-education-program

Dr. Robin Jocius, Program Coordinator

robin.jocius@citadel.edu

Dr. Britnie Kane

britnie.kane@citadel.edu

Dr. Soo Joung Kim

soojoung.kim@citadel.edu

Mission Statement

Through quality field experiences and a strong theoretical foundation, candidates who pursue this degree develop a comprehensive knowledge of the field of literacy education. This understanding parallels the school's vision of creating "principled educational leaders who are knowledgeable, reflective, and ethical professionals."

The Master of Education in Literacy Education is nationally recognized by the International Literacy Association.

The general goals and objectives of the program are to support candidates in developing:

- A knowledge and mastery of all aspects of the literacy process;
- A knowledge of those skills necessary to select, administer, and interpret informal and formal assessments used to examine children's and adolescents' literacy strengths and weaknesses;
- A knowledge of the abilities and skills which enhance a wholesome teacher- student-parent relationship in working with students identified as at-risk readers;
- A knowledge of those skills necessary to recognize and accommodate for individual differences in literacy instruction;
- A knowledge of how to plan, supervise, and enhance programs as a literacy coach;
- A knowledge of and ability to design literacy environments to support culturally and linguistically diverse learners;
- A knowledge of the relationship of literacy skills to subject-matter content areas;
- A knowledge of significant research conducted in literacy education;
- A knowledge of a broad range of children's and adolescents' literature and how to incorporate this literature into the classroom;
- A knowledge of how to effectively support English Language Learners (ELLs); and

- A knowledge of how to effectively support and mentor educators and serve as a literacy coach.

Admission Requirements

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of an official transcript directly from each regionally accredited college or university from which a degree has been conferred. Applicants are expected to have a 2.5 cumulative undergraduate grade point average.
3. Submission of valid teaching certificate issued by South Carolina or another state.
4. Students must meet with their advisor for program advisement and course sequence planning. This advisement meeting must take place before registration can occur for the first semester of enrollment.

Students accepted into the Master of Education in Literacy Education are automatically enrolled in the Graduate Certificate in Literacy Education.

Transfer Credit

Course work taken prior to official program admission or course work taken in other programs does not count toward the Master of Education in Literacy Education program/degree without written approval from the faculty advisor and the Dean of the Zucker Family School of Education.

Program Requirements

The Master of Education in Literacy Education is a 36-hour program, consisting of two professional core requirements and ten literacy education courses. A program of study which details the degree requirements is completed by the student and the advisor. The candidate for the Master of Education in Literacy Education degree must satisfactorily complete the Praxis II examination, Teaching Reading. Additionally, candidates will be required to complete a program completion portfolio prior to graduation. Recommendation and verification for certification are completed by the School of Education upon graduation and a passing score on the Praxis II.

Upon completion of coursework, a satisfactory score on the Praxis II, and the requisite years of teaching experiences, a candidate completing the MEd in Literacy Education is recommended for certification as a Literacy Teacher, Literacy Coach, and the R2S Literacy Teacher provided the candidate already possesses a valid teaching certificate in the state of South Carolina. Recommendation for certification as a Literacy Teacher in South Carolina requires two years teaching experience. Recommendation for certification as a Literacy Coach in South Carolina requires five years teaching experience.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light
- The Citadel Principled Leadership Seminar – LDRS 500

The following courses should be taken in sequence as in the program of study.

PROFESSIONAL CORE REQUIREMENTS (six credit hours)

EDUC-536 Educational Psychology

EDUC-512 Data Collection and Analysis

OR

EDUC-549 Applied Measurement Techniques

PROFESSIONAL EDUCATIONAL SPECIALIZATION

(30 credit hours)

EDUC-570 Developing Literacy Skills with At Risk Readers

EDUC-588 Foundations in Literacy

EDUC-589 Methods and Materials for Developing Literacy Skills

EDUC-590 Literacy Assessment and Instruction

EDUC-591 Practicum in Literacy Education

EDUC-592 Content Area Reading and Writing

EDUC-594 Internship in Literacy Education

EDUC-608 Literature for Children and Adolescents

EDUC-642 Coaching in Literacy Education

EDUC-643 Action Research in Literacy Coaching

TOTAL REQUIRED CREDITS: 36 Credit Hours

Descriptions of courses are listed in the last section of this catalog.

Specialist in Educational Leadership - School Superintendent

Zucker Family School of Education

<http://www.citadel.edu/root/educational-leadership>

Dr. Lee Westberry, Program Coordinator,
lwestber@citadel.edu

Dr. Kent Murray, kent.murray@citadel.edu

Mission Statement

The Zucker Family School of Education's Specialist in Educational Leadership - School District Superintendent program is nationally accredited by the Council for the Accreditation of Educator Preparation (CAEP) and the Educational Leadership Constituent Council (ELCC). These accrediting bodies allow the Zucker Family School of Education's Licensing Agent, the Dean of ZFSOE to recommend candidates for certification as a school district superintendent in South Carolina upon program completion. The Specialist in Educational Leadership - School Superintendent program's accreditation is effective through October 31, 2021.

The Specialist in Educational Leadership (Ed.S.) Degree is an advanced graduate degree between the Master's and Doctoral degrees. In accordance with South Carolina Certification Regulations, The Citadel offers an Ed.S. major that prepares candidates for SC endorsement at the superintendent's level.

Admission Requirements

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of official transcripts for conferred graduate degrees from each regionally accredited college or university attended (including a Master's Degree in educational leadership or a Master's Degree in another educational area along with certification in educational leadership) with minimum 3.25 grade point average.
3. Possession of a South Carolina State Professional Teaching Certificate with school administrator endorsement that is valid at elementary, middle, or secondary levels. Students may submit official PRAXIS scores demonstrating passing scores in administration along with a valid S.C. teaching certificate if their endorsement has not yet posted.
4. Verification of a total of three years' experience as a pre-K-12 or post-secondary teacher.

Note: Specialist in Educational Leadership courses taken prior to official program admission will not count toward the degree without written approval from the Dean of the Zucker Family School of Education.

Program Requirements

A total of 33 semester hours must be completed for the Specialist in Educational Leadership. In addition to the general goals of the school's graduate program, the objectives of the Specialist in Education degree are knowledge of school law, curricular trends, school building trends, and program budgeting; skill in using various techniques for goal setting and problem diagnosis in such areas as instructional programs, staff development, and community relations; skill in decision-making and in evaluating decisions on the basis of subsequent information; knowledge of research in administration, curriculum, human development and staffing; performance behavior in a job setting; knowledge of the role of the school in modern America and the multicultural currents influencing the school; knowledge and skills for performing in a political setting; and, a clear understanding and working knowledge of Principled Educational Leaders. A student, who applies for certification as a school district administrator, must meet the following:

1. A minimum qualifying score on the state administrator's examination prior to entrance into the internship
2. Three years teaching experience
3. Program audit showing completion of 33 credit hours:
 - a. Required courses, 27 credit hours
 - b. Two internships, EDUC 632 and EDUC 633, (9-12 internship hours per week over a six-month period), six credit hours

Candidates for administrative internships must:

1. Complete 21 credit hours prior to submitting an internship application for faculty review.
2. Earn a passing score on the PRAXIS, South Carolina's Supervision and Administration Examination.
3. Meet with an advisor to review request and receive approval for admission to an internship.
4. Apply to CGC to register for enrollment in an internship.

Applicants for spring administrative internships should file an application with their advisor no later than December 1 of the preceding semester. Applicants for fall administrative internships should file an application with their advisor no later than August 1 of the preceding semester. Applicants for summer administrative internships should file an application with their advisor no later than March 1 of the preceding semester. In order to register for internships, authorized applications must be on file in the CGC office, along with the valid South Carolina state administrator's examination score.

*Proviso—Candidates filing applications and applying for administrative internships after the December, March, and August deadlines cannot be guaranteed enrollment.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

PROFESSIONAL REQUIREMENTS (33 credit hours)

- EDUC-535 Organizational Theory and Behavior
- EDUC-598 Curriculum Project (Prerequisite EDUC 531/532)
- EDUC-600 Professional Negotiations
- EDUC-603 School Plant Seminar
- EDUC-606 Superintendency and School Organization
- EDUC-610 Seminar on School Improvement
- EDUC-612 Seminar in School Law (Prerequisite EDUC 601)
- EDUC-614 Seminar in Educational Administration
- EDUC-619 Assessment of School Programs
- EDUC-632 Internship in Superintendency
- EDUC-633 Internship in Superintendency

TOTAL PROGRAM REQUIRED COURSES:
33 Credit Hours (beyond the master's degree)

*If EDUC-529, EDUC-531/532 or EDUC-616 were not taken in a master's program, the appropriate course must be taken as a requirement of the Ed. S.

Descriptions of courses are listed in the last section of this catalog.

REQUIREMENTS FOR INITIAL CERTIFICATION AT THE ADVANCED LEVEL

I. ADMINISTRATION

C. District Superintendent

1. Master's degree
2. Valid South Carolina Teaching or Professional Certificate at the elementary, middle or secondary level
3. Minimum qualifying score(s) on the area examination(s) required by the State Board of Education
4. Verification of a total of three years' experience as a pre-K-12 or post-secondary teacher and two years as a school or school district administrator, post-secondary administrator, or school business administrator
5. Completion of an advanced program approved by the State Board of Education for the training of school superintendents South Carolina Regulation 43-64.

South Carolina Teacher Certification Manual R 43-64
REQUIREMENTS FOR CERTIFICATION AT THE
ADVANCED LEVEL.

GRADUATE
CERTIFICATE
PROGRAMS

Graduate Certificate in Aeronautical Engineering

Department of Mechanical Engineering
843-953-5057

<http://www.citadel.edu/root/me-graduate-programs/aeronautical>

Dr. Robert J. Rabb, P.E.
rrabb@citadel.edu

The Graduate Certificate in the Aeronautical Engineering program is designed to provide students with a unique perspective, essential knowledge, and advanced engineering skills needed by today's practicing mechanical engineer. The courses are design focused for immediate transference to design applications in current industry and research.

Admission Requirements

Successful applicants must meet the following criteria for admission into the Aeronautical Engineering Certificate program.

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of an official transcript of the baccalaureate degree directly from an accredited college or university.

*Students who have been admitted to the MSME with an aeronautics focus need to apply for the Aeronautical Engineering Graduate Certificate program (application fee will not be required for those already admitted to the MSME program).

All material must be received by the CGC office and evaluated by the department to receive consideration to the Aeronautical Engineering Graduate Certificate program. An undergraduate engineering degree from an ABET accredited engineering program is required or approved degree from the department head.

Program Requirements

Students are required to complete 12 hours of graduate study within a three-year period from the time of registration in their first mechanical engineering graduate course at The Citadel. Students who fulfill the program requirements will earn a Graduate Certificate in Aeronautical Engineering.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

Graduation Requirements (Course Requirements)

All certificate candidates must:

1. File a plan of study outlining the intended areas of interest and listing the top four corresponding courses of interest.
2. Complete four courses (12 hours) from the aeronautical engineering area of study below.

Required Course:

MECH 631 Advanced Engineering Mathematics

At least three of the following courses:

MECH 611 Advanced Fluid Mechanics

MECH 670 Applied Aerodynamics

MECH 771 Compressible Flow

MECH 772 Computational Methods in Thermal Sciences

Course/ Certificate Availability: The courses / certificates will be offered based on student preferences / overall demand indicated in the plan of study to be submitted after acceptance. Students should be aware course / certificate offerings will be based on minimum class size enrollment. The Mechanical Engineering Program will continually monitor student interest to expedite completion of the program of study.

Graduate Certificate in Built Environment and Public Health

School of Engineering, 843-953-5083

www.citadel.edu/root/cee-graduate-programs/environmental-public-health

Dr. William J. Davis, P.E.

jeff.davis@citadel.edu

The Graduate Certificate in Built Environment program is designed to provide students with a unique perspective and essential knowledge of interdisciplinary data, methods, objectives and outcomes in the fields of engineering, public health, physical activity, public administration, and city planning.

Admission Requirements

Successful applicants must meet the following criteria for admission into the Built Environment and Public Health Graduate Certificate program.

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of an official transcript of the baccalaureate degree directly from an accredited college or university.

All material must be received by the CGC office and evaluated by the department to receive consideration to the Built Environment and Public Health Graduate Certificate program. An undergraduate engineering degree is not required.

Program Requirements

Students are required to complete two courses (six credit hours) of graduate study within a three-year period from the time of registration in their first civil engineering graduate course at The Citadel and elective course as described herein. Students who fulfill the program requirements will earn a Graduate Certificate in Built Environment and Public Health.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

GRADUATION REQUIREMENTS (Course Requirements)

All degree candidates must complete two courses at The Citadel:

Required Course:

CIVL 642 Public Health, Physical Activity, and Design of the Built Environment

At least one of the following courses:

CIVL 506 Geographic Information Systems
CIVL 640 Urban Mobility Infrastructure Policy and Planning

A max of two courses will be transferred in from the following list, or approved by the department head:

Medical University of South Carolina
PHHBP 700 Social and Behavioral Sciences
PHGEN 708 Principles of Environmental Health Sciences

Clemson University
CRP 8060 Urban and Regional Analysis
CRP 8010 Planning Process and Legal Foundations
CRP 8020 Site Planning & Infrastructure
RUD 8600 Urban Design Studio I
RUD 8630 Urban Design Studio II

College of Charleston
PUBA 502 Applications in GIS
PUBA 602 Public Policy
PUBA 611 Urban Policy
EVSS 601 Economic Theory for Policy Analysis
EVSS 659 Environmental Statistics

Transfer Credit: A maximum of two courses (6 credit hours) may be transferred in from a regionally accredited college or university, provided: (1) grades of “B” or better were received in the courses being considered, (2) credit was earned within six years prior to admission into The Citadel MSCE program, and (3) each course has been approved by the department head.

Course/ Certificate Availability: The courses/ certificates will be offered based on student preferences/ overall demand indicated in your plan of study to be submitted after acceptance. Students should be aware course/ certificate offerings will be based on minimum class size enrollment. The Civil and Environmental Engineering Department will continually monitor student interest to expedite completion of your program of study.

Graduate Certificate in Composites Engineering

Department of Mechanical Engineering
843-953-5057

www.citadel.edu/root/me-graduate-programs/composites

Dr. Robert J. Rabb, P.E.
rrabb@citadel.edu

The Graduate Certificate in the Composites Engineering program is designed to provide students with a unique perspective, essential knowledge, and advanced engineering skills needed by today's practicing mechanical engineer. The courses are design focused for immediate transference to design applications in current industry and research.

Admission Requirements

Successful applicants must meet the following criteria for admission into the Composites Engineering Certificate program.

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of an official transcript of the baccalaureate degree directly from an accredited college or university.

*Students who have been admitted to the MSME with a composites focus need to apply for the Composites Engineering Graduate Certificate program (application fee will not be required for those already admitted to the MSME program).

All material must be received by the CGC office and evaluated by the department to receive consideration to the Composites Engineering Graduate Certificate program. An undergraduate engineering degree from an ABET accredited engineering program is required or approved degree from the department head.

Program Requirements

Students are required to complete 12 hours of graduate study within a three-year period from the time of registration in their first mechanical engineering graduate course at The Citadel. Students who fulfill the program requirements will earn a Graduate Certificate in Composites Engineering.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

GRADUATION REQUIREMENTS (Course Requirements)

All certificate candidates must:

1. File a plan of study outlining the intended areas of interest and listing the top four corresponding courses of interest.
2. Complete four courses (12 hours) from the composites engineering area of study below.

Required Course:

MECH 604 Advanced Mechanics of Materials

At least three of the following courses:

MECH 605 Materials and Process Selection
MECH 606 Fatigue and Fracture
MECH 702 Theory of Elasticity
MECH 703 Theory of Plasticity
MECH 708 Mechanics of Composite Materials

Course/ Certificate Availability: The courses / certificates will be offered based on student preferences / overall demand indicated in the plan of study to be submitted after acceptance. Students should be aware course / certificate offerings will be based on minimum class size enrollment. The Mechanical Engineering Program will continually monitor student interest to expedite completion of the program of study.

Graduate Certificate in Computer Engineering

Department of Electrical and Computer Engineering

843-953-5057

<http://www.citadel.edu/root/ece>

Dr. Robert J. Barsanti

robert.barsanti@citadel.edu

The Graduate Certificate in Computer Engineering is designed for students seeking advanced engineering techniques and professional development skills in the field of computer engineering.

Admission Requirements

Successful applicants must meet the following criteria for admission into the Computer Engineering Graduate Certificate program.

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of an official transcript of the baccalaureate degree directly from an ABET accredited engineering program or approved alternative.
3. Permission of the department head or program manager.

*Students who have been admitted to The Citadel's MSEE program and desire the certificate must also apply for the Graduate Certificate in Computer Engineering. The application fee will be waived for those already admitted to the MSEE program.

Program Requirements

Students are required to complete 12 hours of graduate study within a three-year period from the time of registration in their first electrical engineering graduate course at The Citadel. Students who fulfill the program requirements will earn a Graduate Certificate in Computer Engineering.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

CERTIFICATE REQUIREMENTS (Course Requirements)

All degree candidates must:

1. File a plan of study outlining the intended areas of interest and listing the top four corresponding courses of interest
2. Complete four courses (12 hours) from the electrical and computer engineering areas of study below.

Computer Engineering

ELEC 635	Advanced Signal Processing
ELEC 645	Data Communications Networks
ELEC 655	Digital Communications
ELEC 675	Computer Architecture

Course/Certificate Availability: The above courses and certificates will be offered based on student preferences and overall demand indicated in your plan of study to be submitted after acceptance. Students should be aware course offerings will be based on minimum class size enrollment. The Electrical and Computer Engineering Department will continually monitor student interest to expedite completion of your program of study.

Graduate Certificate in Cybersecurity

Department of Cyber and Computer Sciences
843-953-5048
<http://www.citadel.edu/ccs>

Dr. Shankar Banik, Department Head
843-953-5039, shankar.banik@citadel.edu
Dr. Michael Verdicchio, Program Director
843-953-6987, mv@citadel.edu

With cybercrime on the rise, cybersecurity grows more vital with each passing day. Our nation's leaders recognize cybersecurity as a national imperative, and there is an immediate need for cybersecurity workforce development in the Lowcountry. Major employers of computing professionals and the defense and business industries in the Lowcountry are increasingly interested in employees specializing in cybersecurity.

Learning Outcomes

The Citadel's Graduate Certificate in Cybersecurity prepares you to play a critical role in the world of Internet security. By the end of this program, students will be able to:

- Describe basic components of cybersecurity
- Characterize the security profile of different types of networks
- Analyze and use classical and public key cryptography algorithms
- Secure a system from different kinds of attacks
- Analyze security of a cybersystem and perform risk assessment
- Discuss legal and ethical issues relating to cybersecurity

Admission Requirements

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of an official transcript reflecting the highest degree earned from a regionally accredited college or university.
3. Applicants are expected to have an undergraduate grade point average of 3.0.*
4. Approval from the Program Director or Department Head before registering for any graduate Computer Science (CSCI) courses.
5. Competency, demonstrated through course work, approved work experience, or a program-administrated competency exam, in the areas of basic Computer Architecture, object-orientated Programing, Discrete Mathematics, and Data Structures.

*With the approval of the joint program admissions committee, students whose grade point average is less than 3.0 may be permitted to take up to six credit hours of courses

in a non-degree seeking status and then apply for admission after successful completion of these courses.

All material must be received by the CGC office and reviewed by the department to receive consideration for admission to this graduate certificate program. Coursework is not to begin until admission has been granted into the program.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

Program Requirements

The Cybersecurity certificate program consists of four, three credit hour courses totaling 12 graduate credit hours. At least 4 credit hours must be taken at each institution.

CSCI-614—Advanced Operating Systems
CSCI-631—Privacy and Security Issues
CSCI-632—Data Communications and Networking
CSCI-641—Advanced Cybersecurity (Prerequisites: CSCI 631 and CSCI 632)

Total Required Courses: 12 credit hours

Descriptions of courses are listed in the last section of this catalog.

Graduate Certificate in Environmental Studies

Department of Biology
843-953-5203

www.citadel.edu/root/biology-programs/grad-certificate-environmental-studies

Dr. Paul Nolan, 843-953-7076
paul.nolan@citadel.edu

Mission Statement

The mission of the Environmental Studies graduate certificate program is to advance the knowledge of students in a variety of broadly-based ecological and environmental topics. The graduate certificate is designed to complement an existing baccalaureate degree with an interdisciplinary in-depth analysis of the complex interactions between humans, other organisms, and the environment. The program is especially relevant for educators seeking to enhance their ability to teach about local and global environmental issues in the classroom, and professionals seeking an analytical basis to understanding the complex interactions between living organisms and their environment.

Admission Requirements

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of an official transcript reflecting the highest degree earned from a regionally accredited college or university. Additional transcripts may be required depending on undergraduate course requirements by program.

Students admitted to the program are not required to have an undergraduate major in biology, however it is assumed that students will have had at least twelve hours in college level biology courses, including a course in ecology. Prospective students who do not have the recommended undergraduate biology requirements must confer with the department head or graduate advisor prior to beginning the program.

All material must be received by the CGC office and reviewed by the department to receive consideration for admission to this graduate certificate program. Coursework is not to begin until admission has been granted into the program.

Courses taken as part of the Environmental Studies graduate certificate can be counted toward the Master of Arts in Biology.

**Environmental Studies graduate certificate students who have successfully completed 9 graduate hours may apply to waive the *testing requirement* for admission to the Master of Arts in Biology program. Successful completion requires a minimum 3.0 GPA with no course grades below B

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

Program Requirements

The Graduate Certificate in Environmental Studies program requires a minimum of five graduate-level courses totaling at least 16 semester hours. Students are required to take BIOL 609 (Seminar in Environmental Studies). Each student is also required to choose a minimum of two courses at least one of which must be a 4 credit hour course with lab (minimum of 7 semester hours) from the following list of approved Biology courses, and a minimum of two courses (6 semester hours) from the following list of approved Engineering, Humanities, and Social Science courses.

Required Course (three credit hours)

BIOL-609 – Seminar in Environmental Studies

Biology Elective Courses (2 courses, minimum of seven semester hours)

BIOL-505 – Biometry

BIOL-506 – Ecology*

BIOL-509 – Marine Biology*

BIOL-514 – The Vascular Flora of South Carolina*

BIOL-518 – Ornithology*

BIOL-519 – Economic Botany

BIOL-526 – Freshwater Biology*

BIOL-604 – Marine Invertebrates*

BIOL-606 – Field Methods in Biology*

BIOL-607 – Microbiology*

BIOL-611 – Graduate Research**

BIOL-621 – Aquatic Toxicology*

BIOL-625 – Tropical Rainforest and Reef Ecology*

BIOL-631 – Environmental Physiology

*four credit hours with lab

** variable credit hours

Engineering, Humanities, and Social Sciences Electives (two courses, six semester hours)

ANTH-501 – Physical and Cultural Adaptations

CIVL-506 – Geographic Information Systems

CIVL-602 – Water Quality Modeling and Management

CIVL-604 – Aquatic Chemistry

HIST-610 – Special Topics in U.S. History

PSCI-509 – Urban Politics

Total Required Courses: 16 credit hours

Descriptions of courses are listed in the last section of this catalog

Graduate Certificate in Geotechnical Engineering

School of Engineering
843-953-5083

Dr. William J. Davis, P.E.
jeff.davis@citadel.edu

The Graduate Certificate in Geotechnical Engineering program focuses on applied advanced engineering skills needed by today's practicing geotechnical engineer. The courses are designed focused for immediate transference to design applications in the United States.

Admission Requirements

Successful applicants must meet the following criteria for admission into the Geotechnical Engineering Graduate Certificate program.

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of an official transcript of the baccalaureate degree directly from an ABET accredited engineering program or approved alternative.

*Students who have been admitted to the MSCE with a geotechnical focus need to apply for the Geotechnical Engineering Graduate Certificate program (application fee will not be required for those already admitted to the MSCE program).

All material must be received by the CGC office and evaluated by the department to receive consideration to the Geotechnical Engineering Graduate Certificate program. An undergraduate civil engineering degree from an ABET accredited engineering is required or approval degree from the department head.

Program Requirements

Students are required to complete 12 hours of graduate study within a three-year period from the time of registration in their first civil engineering graduate course at The Citadel. Students who fulfill the program requirements will earn a Graduate Certificate in Geotechnical Engineering.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

GRADUATION REQUIREMENTS (Course Requirements)

All degree candidates must:

1. File a plan of study outlining the intended areas of interest and listing the top four corresponding courses of interest.
2. Complete 4 courses (12 hours) from the geotechnical engineering areas of study below.

Geotechnical Engineering

CIVL 730	Geotechnical Earthquake Engineering
CIVL 731	Geo-environmental Engineering
CIVL 732	Advanced Soil Mechanics
CIVL 733	Advanced Foundations Design
CIVL 734	Soil Behavior

Course/ Certificate Availability: The courses/ certificates will be offered based on student preferences/ overall demand indicated in your plan of study to be submitted after acceptance. Students should be aware course/ certificate offerings will be based on minimum class size enrollment. The Civil and Environmental Engineering Department will continually monitor student interest to expedite completion of your program of study.

Graduate Certificate in Higher Education Leadership

Zucker Family School of Education
843-953-5097

www.citadel.edu/root/counselor-education-programs/graduate-certificate-in-student-affairs

Dr. Tara Hornor, tara.hornor@citadel.edu

Dr. Guy Ilagan, gilagan@citadel.edu

Dr. Aaron Oberman, Program Coordinator,
obermana1@citadel.edu

Dr. George T. Williams, williamsg@citadel.edu

The Citadel Graduate College (CGC) and the Division of Counselor Education within the Zucker Family School of Education (SOE) is committed to principled educational leadership in higher education, making The Citadel the ideal place for offering a program that aims to prepare higher education leaders.

The Graduate Certificate in Higher Education Leadership is designed to teach students aspiring to work (or currently working) in higher education how to:

- Use resources effectively to achieve institutional missions and goals
- Establish high expectations for the learning process
- Equip individuals with the skills needed to engage students in active learning, while building supportive and inclusive communities within higher education institutions that help students develop coherent values and ethical standards.

Admission Requirements

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of an official transcript reflecting the highest degree earned from a regionally accredited college or university.

Once all admission requirements have been satisfied, the SOE Division of Counselor Education Admissions Committee will review the application, and the applicant will be notified of the admission decision. Coursework is not to begin until admission has been granted into the program.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

Program Requirements

The Higher Education Leadership graduate certificate program consists of four, three credit-hour courses totaling 12 graduate credit hours. Courses in the program are offered online.

EDUC-530 - Strategic Planning and Assessment in Higher Education

EDUC-533 - Higher Education Finance

EDUC 534 - Advanced Leadership in Higher Education

EDUC-539 - Higher Education Administration

Total Required Courses: 12 credit hours

Descriptions of courses are listed in the last section of this catalog.

Graduate Certificate in Hispanic Studies

Department of Modern Languages

www.citadel.edu/root/mlng-graduate-certificate-hispanic-studies

Dr. Sara Fernandez-Medina, 843-953-5065,
fernandezs@citadel.edu

Dr. Silvia Roca-Martinez, 843-953-6811,
srocamar@citadel.edu

The Citadel's Graduate Certificate in Hispanic Studies provides a panoramic approach to understanding the vast Hispanic world at the graduate level. The program is designed for native and non-native speakers of Spanish who wish to increase their knowledge of Hispanic language, culture, society, and literature. The program targets the regional needs of working professionals who wish to enhance their profession and increase employment potential amid the current demographic shifts in the Lowcountry.

The objectives of the programs are to:

- increase communicative and written competence in the Spanish language
- provide in-depth knowledge of the cultural, historic, political, and social milieus of the Spanish-speaking countries
- develop critical and real-world skills necessary for a broader understanding of the issues related to the Spanish-speaking societies of Latin America and Spain
- produce professionals in the field of Hispanic Studies

The program would benefit professionals throughout the community interested in enhancing current expertise or proving foreign language competency required for promotion and/or salary increases. Additional areas where the Graduate Certificate Program in Hispanic Studies would be beneficial include industries such as healthcare, law enforcement, social services, immigration and naturalization, human resources, and civic government.

Admission Requirements

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of an official transcript reflecting the highest degree earned from a regionally accredited college or university, in any field. Additional transcripts may be required depending on undergraduate course requirements by program.
3. Submission of letter of intent, no more than two pages, which answers the following questions:
 - a. How has your experience/education prepared you for graduate courses in Hispanic Studies?
 - b. How will your knowledge, skills, and experiences contribute to this program's learning community?
 - c. What do you hope to gain from this Hispanic Studies graduate certificate program?

4. Submission of the names and contact information for three (3) references familiar with your work.

All material must be received by the CGC office and reviewed by the department to receive consideration for admission to this graduate certificate program. Coursework is not to begin until admission has been granted into the program.

Program Requirements

The Graduate Certificate in Hispanic Studies program will offer six graduate-level courses (18 credit hours) during fall and spring semesters as well as during both summer sessions. The courses will be offered in sequence and rotated accordingly. Students must complete 12 credit hours to earn the Graduate Certificate in Hispanic Studies.

The development of the curriculum is based largely on two key factors:

1. Spanish teachers at the level of secondary education will primarily constitute those students interested in the Graduate Certificate Program in Hispanic Studies.
2. The demographic these teachers have contact with is primarily Latin American students from Mexico, the Caribbean and Central America.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

PROGRAM REQUIREMENTS

SPAN-520–Mexico
SPAN-521–The Hispanic Presence in the United States
SPAN-522–Culture and Literature of Spain
SPAN-523–Advanced and Contrastive Grammar
SPAN-524–Recent Trends in Teaching Spanish as a Second Language
SPAN-525–Spanish for the Professional
SPAN-550–Special Topics: Culture and Literature of South America
SPAN-560–Hispanic Service Learning/Internship

Total Required Courses: 12 credit hours

Descriptions of courses are listed in the last section of this catalog

Graduate Certificate in History and Teaching Content

Department of History

843-953-5073 <http://www.citadel.edu/root/history-graduate-certificate>

Dr. Keith Knapp, keith.knapp@citadel.edu

Mission Statement

The Certificate in History and Teaching Content will offer school teachers and other interested graduate students a current knowledge of world, western and United States history. The courses in the certificate program will place a special emphasis on relating content for the history classes and programs taught by elementary, middle and secondary-school teachers.

Admission Requirements

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of an official transcript reflecting the highest degree earned from a regionally accredited college or university. Additional transcripts may be required depending on undergraduate course requirements by program.
3. Submission of letter of intent, no more than two pages, which answers the following questions:
 - a. How has your experience/education prepared you for graduate courses in history?
 - b. How will your knowledge, skills, and experiences contribute to this program's learning community?
 - c. What do you hope to gain from this graduate certificate program?
4. Submission of the names and contact information for three (3) references familiar with your work. At least two of these references must be from professional colleagues (e.g. head of department, school principal or other administrator).

One of the two options must apply for acceptance into the program:

1. Baccalaureate degree in Elementary Education, Social Studies Education or History.
2. Baccalaureate degree in a related Social Studies field (e.g. Political Science, International Relations, Geography, Sociology, etc.) with at least two years of teaching experience in a Social Studies department or Elementary School classroom.

All material must be received by the CGC office and reviewed by the department to receive consideration for admission to this graduate certificate program. Coursework is not to begin until admission has been granted into the program.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

Program Requirements

The Graduate Certificate in History and Teaching Content is a 12 credit hour program. Students must complete one required course and 3 elective courses, totaling four, three credit hour courses.

Required Course:

HIST-594—Histography for Social Studies Teachers

Elective Courses (select three):

HIST-560—History of the Non-Western World

HITC-501—History of the United States to 1877

HITC-502—History of the United States from 1877

HITC-503—South Carolina History

HITC-504—Europe and the World to 1500

HITC-505—Europe and the World from 1500

HITC-511—Special Topics in the History of the United States

HITC-512—Special Topics World History

Total Required Courses: 12 credit hours

Descriptions of courses are listed in the last section of this catalog.

Graduate Certificate in Information Systems

Department of Cyber and Computer Sciences
<http://www.citadel.edu/ccs>

Dr. Shankar Banik, Department Head
843-953-5039, shankar.banik@citadel.edu
Dr. Michael Verdicchio, Program Director
843-953-6987, mv@citadel.edu

Learning Outcomes

The Citadel's Graduate Certificate in Information Systems is designed to provide its students with the knowledge, skills, and abilities associated with information systems. By the end of this program, students will be able to:

- Develop client/server network applications using network sockets API
- Analyze software vulnerabilities and hardening techniques
- Demonstrate the ability to effectively work in a team

Admission Requirements

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of an official transcript reflecting the highest degree earned from a regionally accredited college or university.
3. Applicants are expected to have an undergraduate grade point average of 3.0.*
4. Approval from the Program Director or Department Head before registering for any graduate Computer Science (CSCI) courses.
5. Competency, demonstrated through course work, approved work experience, or a program-administrated competency exam, in the areas of basic Computer Architecture, object-orientated Programing, Discrete Mathematics, and Data Structures.

*With the approval of the joint program admissions committee, students whose grade point average is less than 3.0 may be permitted to take up to six credit hours of courses in a non-degree seeking status and then apply for admission after successful completion of these courses.

All material must be received by the CGC office and reviewed by the department to receive consideration for admission to this graduate certificate program. Coursework is not to begin until admission has been granted into the program.

GRADUATION REQUIREMENTS(non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

Program Requirements

The Information Systems certificate program consists of four, three credit hour courses totaling 12 graduate credit hours. At least 4 credit hours must be taken at each institution.

CSCI-601—Data Modeling and Database Design
CSCI-631—Privacy and Security Issues
CSCI-632—Data Communications and Networking
CSCI-638—Advanced Topics in Database Systems
(Prerequisite: CSCI 601)

Total Required Courses: 12 credit hours

Descriptions of courses are listed in the last section of this catalog.

Graduate Certificate in Intelligence Analysis

Department of Intelligence and Security Studies

843-953-6886

<http://www.citadel.edu/root/intelligence-and-security-studies-graduate-programs/certificate-in-intelligence-analysis>

Dr. Carl Jensen, cjensen1@citadel.edu

The Graduate Certificate in Intelligence Analysis is designed for working professionals who desire to increase their knowledge of Intelligence Analysis issues, who seek to understand the role and importance of effective leadership for national security, and who wish to apply leadership strategies and tactics to complex intelligence issues.

This program introduces applicable management principles, policy analysis, critical thinking and enhances critical leadership skills necessary to successfully address security and intelligence challenges facing the United States.

The program is well-suited to professionals working in state, local and, federal intelligence positions such as law enforcement, personnel, local and state agencies that partner with intelligence professionals and others seeking to increase their knowledge and competencies in the area of intelligence.

Admission Requirements

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of an official transcript reflecting the highest university. Additional transcripts may be required depending on undergraduate course requirements by program.
3. Submission of letter of intent, no more than two pages, which answers the following questions:
 - a. How has your experience/education prepared you for graduate courses in intelligence analysis?
 - b. How will your knowledge, skills, and experiences contribute to this program's learning community?
 - c. What do you hope to gain from this Intelligence Analysis graduate certificate program?
4. Submission of the names and contact information for three (3) references familiar with your work.

All material must be received by the CGC office and reviewed by the department to receive consideration for admission to this graduate certificate program. Coursework is not to begin until admission has been granted into the program.

Program Requirements

Students must complete 15 hours of graduate study (5 courses). The program consists of three required intelligence courses (3 credit hours each) at the graduate level and each student must choose two electives from a specified list of criminal justice, political science, and homeland security courses. A stand-alone certificate in Intelligence Analysis is provided to individuals who are not enrolled in a degree program at The Citadel but are interested in receiving a Graduate Certificate in Intelligence Analysis.

Students who are simultaneously enrolled in both the Master of Arts in Social Science (MASS degree) and the Intelligence Analysis graduate certificate may count the five Intelligence Analysis courses as their Cluster A requirements for the MASS degree. Applicants for simultaneous MASS degree/Intelligence Analysis certificate must meet all the requirements (admission, declaration, by course completion without substitution) of the simultaneous MASS degree/Intelligence Analysis certificate.

Students may enroll in simultaneous MASS/Leadership and MASS/Intelligence Analysis certificate programs (since the former fills the Cluster B and the latter fills the Cluster A) as currently outlined in the CGC catalog. All courses can be applied to the MA program in Intelligence and Security Studies.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

Required Courses:

INTL-580—Introduction to Intelligence
INTL-581—Intelligence Research and Analysis
INTL-582—Intelligence Theory Application

Elective Courses (select two):

CRMJ-515/INTL-515/PSCI-515—Topics in Homeland Security
CRMJ-555—Leadership Application Course in Criminal Justice
CRMJ-562—Comparative Criminal Justice Systems
CRMJ-568/INTL-568/PSCI-568—International and Domestic Terrorism
CRMJ-583—Transnational Organized Crime
HIST-591—Special Topics in European History
INTL-560—Intelligence and Homeland Security Administration
INTL-569/PSCI-569—National Security Policy
INTL-570—Homeland Security
INTL-572—Legal and Ethical Dimensions of Intelligence and Homeland Security
INTL-585—Topics in Intelligence
LDRS-750—Evolution of Military Leadership Thought
LDRS-751—Survey of US Military Leaders
LDRS-752—Survey of World Military Leaders
LDRS-753—Strategic & Contemporary Military Leadership Issues

PSCI-510—Topics in Political Science
PSCI-564—US Foreign Relations
PSCI-565—International Politics
PSCI-566—International Political Economy
PSCI-571—Comparative Politics
PSCI-572—International Organizations
PSCI-573—International Political Theory
PSCI-575—US Foreign Policy Leadership
PSCI-576—International Law

Total Required Courses: 15 credit hours

Descriptions of courses are listed in the last section of this catalog.

Graduate Certificate in Leadership

Department of Leadership Studies

843-953-8401

www.citadel.edu/root/graduate-certificate-in-leadership

leadership@citadel.edu

Faith Rivers James, J.D.

Associate Provost for Leadership,

Department Head & Professor of Leadership

friversjames@citadel.edu

Dr. John Altick

Leadership Studies Advisor

843-953-2425, jaltick@citadel.edu

The Graduate Certificate in Leadership supports the development of principled leaders. As a rigorous concentration in the various dimensions of leadership, this certificate helps students to understand and refine the qualities that businesses, charitable organizations, government agencies, and the military expect today. The courses, all offered online, examine the full spectrum issues pertaining to organizational leadership theory and practice.

The Certificate consists of five (5) three (3) hour courses at the graduate level. Students may receive a stand-alone Certificate in Leadership, or use the courses towards completion of the following graduate programs at The Citadel: Master of Business Administration; Master of Science in Project Management; Master of Arts in Intelligence and Security Studies, or Master of Arts in Social Science.

Leadership Certificate students who have successfully completed 9 hours may apply and waive the **testing requirement** for admission to the Masters of Science in Leadership. Successful completion requires a minimum 3.0 GPA with no course grades below C+. The five courses in the certificate program may be coupled with the following seven additional courses to complete the M.S. in Leadership degree.

- LDRS 710
- LDRS 712
- LDRS 715
- LDRS 723 or BADM 713
- LDRS 766 or BADM 766
- PSYC 570
- PSCI 501 or EDUC 512

Leadership Certificate students should complete LDRS 722 and either LDRS 711 or LDRS 714 prior to applying for admission to the MS in Leadership program.

Admission Requirements

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of an official transcript for the baccalaureate degree from a regionally accredited college or university.

All material must be received by the CGC office and evaluated by the department to receive consideration for admission to this graduate certificate program. Coursework is not to begin until admission has been granted into the program.

Those enrolled in the Master of Science in Leadership program will be automatically accepted into this certificate program.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

Program Requirements

The Graduate Certificate in Leadership is a 15 credit hour program consisting of the following requirements:

Required Courses (six Credit hours):

LDRS 722—Leadership in Organizations

PSYC 570—Social and Cognitive Foundations of Interpersonal Behavior

Electives (nine Credit hours), choose three (3) of the following:

LDRS 710—Ethics, Values, & Principled Leadership

LDRS 711—Leading Change: Organization Development and Transformation *

LDRS 712—Leading Teams: Coaching, Culture, Diversity, and Globalization

LDRS 714—Strategic Leadership, Vision, Mission and Contemporary Issues **

LDRS 723 or BADM 713—Communications for Leadership

BADM 740—Global Business Strategy **

(MBA students must take this course as one of the three Leadership Certificate electives)

PMGT 672—Applied Leadership Concepts ***

(MS Project Management students must take this course as one of the three Leadership Certificate electives)

PSYC 500—Human Growth and Development

* LDRS 722 is a prerequisite for these courses.

** If you are a MBA student, you must take BADM 740.

*** If you are a MS Project Management student, you must take PMGT 672.

Students planning to pursue an MS in Leadership must take either LDRS 711 or LDRS 714.

Total Required Courses: 15 credit hours

Descriptions of courses are listed in the last section of this catalog

Graduate Certificate in Literacy Education

Zucker Family School of Education

843-953-5097

www.citadel.edu/root/literacy-education-program

Dr. Robin Jocius, Program Coordinator

rjocius@citadel.edu

Dr. Britnie Kane

kaneb2@citadel.edu

Dr. Soo Joung Kim

soojoung.kim@citadel.edu

Learning Outcomes

The general goals and objectives of the Graduate Certificate in Literacy Education program are to support candidates in developing:

- A knowledge and mastery of all aspects of the literacy process;
- A knowledge of those skills necessary to select, administer, and interpret informal and formal assessments used to examine children's and adolescents' literacy strengths and weaknesses;
- A knowledge of the abilities and skills which enhance a wholesome teacher-student-parent relationship in working with students identified as at-risk readers;
- A knowledge of those skills necessary to recognize and accommodate for individual differences in literacy instruction;
- A knowledge of and ability to design literacy environments to support culturally and linguistically diverse learners;
- A knowledge of the relationship of literacy skills to subject-matter content areas;
- A knowledge of significant research conducted in literacy education; and
- A knowledge of how to effectively support English Language Learners (ELLs).

Admission Requirements

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of an official transcript directly from each regionally accredited college or university from which a degree has been conferred. Applicants are expected to have a 2.5 cumulative undergraduate grade point average.
3. Submission of valid teaching certificate issued by South Carolina or another state.

All material must be received by the CGC office and reviewed by the department to receive consideration for admission to this graduate certificate program. Coursework is not to begin until admission has been granted into the program.

Students accepted into the Master of Education in Literacy Education are automatically enrolled in the Graduate Certificate in Literacy Education.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

Program Requirements

The Graduate Certificate in Literacy Education consists of five, three credit hour courses to be taken in the following order:

EDUC-588—Foundations in Literacy

EDUC-589—Methods and Materials for Developing Literacy Skills

EDUC-590—Literacy Assessment and Instruction

EDUC-591—Practicum in Literacy Education

EDUC-592—Content Area Reading and Writing

Total Required Courses: 15 credit hours

Descriptions of courses are listed in the last section of this catalog.

*Recommendation for certification by the State of South Carolina requires a satisfactory score on the Praxis II Examination.

Non-Licensure Graduate Certificate in Literacy Education Option:

Students who are not licensed by the state may pursue the Graduate Certificate in Literacy Education, but certification will not be recommended from The Citadel nor from the SC State Department of Education.

Admission Requirements

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of an official transcript reflecting the highest degree conferred from a regionally accredited college or university.

Graduate Certificate in Manufacturing Engineering

Department of Mechanical Engineering
843-953-5057

www.citadel.edu/root/me-graduate-
programs/manufacturing

Dr. Robert J. Rabb, P.E.
rrabb@citadel.edu

The Graduate Certificate in the Manufacturing Engineering program is designed to provide students with a unique perspective, essential knowledge, and advanced engineering skills needed by today's practicing mechanical engineer. The courses are design focused for immediate transference to design applications in current industry and research.

Admission Requirements

Successful applicants must meet the following criteria for admission into the Manufacturing Engineering Certificate program.

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of an official transcript of the baccalaureate degree directly from an accredited college or university.

*Students who have been admitted to the MSME with a manufacturing focus need to apply for the Manufacturing Engineering Graduate Certificate program (application fee will not be required for those already admitted to the MSME program).

All material must be received by the CGC office and evaluated by the department to receive consideration to the Manufacturing Engineering Graduate Certificate program. An undergraduate engineering degree from an ABET accredited engineering program is required or approved degree from the department head.

Program Requirements

Students are required to complete 12 hours of graduate study within a three-year period from the time of registration in their first mechanical engineering graduate course at The Citadel. Students who fulfill the program requirements will earn a Graduate Certificate in Manufacturing Engineering.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

GRADUATION REQUIREMENTS (Course Requirements)

All certificate candidates must:

1. File a plan of study outlining the intended areas of interest and listing the top four corresponding courses of interest.
2. Complete four courses (12 hours) from the manufacturing engineering area of study below.

REQUIRED COURSES:

MECH 625	Computer-Aided Design and Analysis
MECH 635	Computer-Aided Design and Analysis Laboratory (0 credit, required with MECH 625)
MECH 640	Manufacturing Process and Design
MECH 645	Machine Design
MECH 660	Advanced Design

Course/ Certificate Availability: The courses / certificates will be offered based on student preferences / overall demand indicated in the plan of study to be submitted after acceptance. Students should be aware course / certificate offerings will be based on minimum class size enrollment. The Mechanical Engineering Program will continually monitor student interest to expedite completion of the program of study.

Graduate Certificate in Mechatronics Engineering

Department of Mechanical Engineering
843-953-5057

www.citadel.edu/root/me-graduate-
programs/mechatronics

Dr. Robert J. Rabb, P.E.
rrabb@citadel.edu

The Graduate Certificate in the Mechatronics Engineering program is designed to provide students with a unique perspective, essential knowledge, and advanced engineering skills needed by today's practicing mechanical engineer. The courses are design focused for immediate transference to design applications in current industry and research.

Admission Requirements

Successful applicants must meet the following criteria for admission into the Mechatronics Engineering Certificate program.

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of an official transcript of the baccalaureate degree directly from an accredited college or university.

*Students who have been admitted to the MSME with a mechatronics focus need to apply for the Mechatronics Engineering Graduate Certificate program (application fee will not be required for those already admitted to the MSME program).

All material must be received by the CGC office and evaluated by the department to receive consideration to the Mechatronics Engineering Graduate Certificate program. An undergraduate engineering degree from an ABET accredited engineering program is required or approved degree from the department head.

Program Requirements

Students are required to complete 12 hours of graduate study within a three-year period from the time of registration in their first mechanical engineering graduate course at The Citadel. Students who fulfill the program requirements will earn a Graduate Certificate in Mechatronics Engineering.

GRADUATION REQUIREMENTS (Course Requirements)

All certificate candidates must:

1. File a plan of study outlining the intended areas of interest and listing the top four corresponding courses of interest.
2. Complete four courses (12 hours) from the mechatronics engineering area of study below.

REQUIRED COURSES:

MECH 650 Modeling, Analysis, and Control Systems
MECH 655 Advanced Mechatronics
MECH 750 Introduction to Modern Control Engineering
MECH 755 Nonlinear Control Engineering

Course/ Certificate Availability: The courses / certificates will be offered based on student preferences / overall demand indicated in the plan of study to be submitted after acceptance. Students should be aware course / certificate offerings will be based on minimum class size enrollment. The Mechanical Engineering Program will continually monitor student interest to expedite completion of the program of study.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

Graduate Certificate in Military Leadership

Department of Leadership Studies

843-953-8401

www.citadel.edu/root/graduate-certificate-in-leadership
leadership@citadel.edu

Faith Rivers James, J.D.

Associate Provost for Leadership,

Department Head & Professor of Leadership

friversjames@citadel.edu

Dr. John Altick

Leadership Studies Advisor

843-953-2425, jaltick@citadel.edu

The Graduate Certificate in Military Leadership provides an opportunity for civilian and military students to pursue a course of study in military leadership. The courses, all offered online, examine world and U.S. military leaders from the perspective of effectiveness, style and practice. In addition, the program includes the study of the evolution of military leadership thought within the larger body of knowledge on leadership. Courses cover contemporary military leadership issues and strategy.

Military Leadership Certificate students who have successfully completed 9 hours may apply and waive the **testing requirement** for admission to the Masters of Science in Leadership. Successful completion requires a minimum 3.0 GPA with no course grades below C+. The five courses in the certificate program may be coupled with the following seven additional courses to complete the M.S. in Leadership degree.

- LDRS 710
- LDRS 712
- LDRS 715
- LDRS 723 or BADM 713
- LDRS 766 or BADM 766
- PSYC 570
- PSCI 501 or EDUC 512

Military Leadership Certificate students should complete LDRS 750/LDRS 722 and LDRS 711 prior to requesting admission to the MS in Leadership program.

Admission Requirements

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of an official transcript for the baccalaureate degree from a regionally accredited college or university.

All material must be received by the CGC office and evaluated by the department to receive consideration for admission to this graduate certificate program. Coursework is not to begin until admission has been granted into the program.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

Program Requirements

REQUIRED COURSES

LDRS 711 – Leading Change: Organizational Development and Transformation*

LDRS 750 – Evolution of Military Leadership Thought

LDRS 751 – Survey of US Military Leaders

LDRS 752 – Survey of World Military Leaders

LDRS 753 – Strategy & Contemporary Military Leadership Issues

* LDRS 750 or LDRS 722 is a prerequisite for this course.

Total Required Courses: 15 credit hours

Descriptions of courses are listed in the last section of this catalog

Graduate Certificate in Power and Energy Engineering

Department of Mechanical Engineering
843-953-5057

www.citadel.edu/root/me-graduate-programs/power-and-energy

Dr. Robert J. Rabb, P.E.
rrabb@citadel.edu

The Graduate Certificate in the Power and Energy Engineering program is designed to provide students with a unique perspective, essential knowledge, and advanced engineering skills needed by today's practicing mechanical engineer. The courses are design focused for immediate transference to design applications in current industry and research.

Admission Requirements

Successful applicants must meet the following criteria for admission into the Power and Energy Engineering Certificate program.

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of an official transcript of the baccalaureate degree directly from an accredited college or university.

*Students who have been admitted to the MSME with a power and energy focus need to apply for the Power and Energy Engineering Graduate Certificate program (application fee will not be required for those already admitted to the MSME program).

All material must be received by the CGC office and evaluated by the department to receive consideration to the Power and Energy Engineering Graduate Certificate program. An undergraduate engineering degree from an ABET accredited engineering program is required or approved degree from the department head.

Program Requirements

Students are required to complete 12 hours of graduate study within a three-year period from the time of registration in their first mechanical engineering graduate course at The Citadel. Students who fulfill the program requirements will earn a Graduate Certificate in Power and Energy Engineering.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

GRADUATION REQUIREMENTS (Course Requirements)

All certificate candidates must:

1. File a plan of study outlining the intended areas of interest and listing the top four corresponding courses of interest.
2. Complete four courses (12 hours) from the power and energy engineering area of study below.

REQUIRED COURSES:

- MECH 615 Applied Heat Transfer
- MECH 617 Advanced Topics in Renewable Energy Systems
- MECH 618 Energy Sources, Technology, and Policy
- MECH 619 Power Systems Engineering

Course/ Certificate Availability: The courses / certificates will be offered based on student preferences / overall demand indicated in the plan of study to be submitted after acceptance. Students should be aware course / certificate offerings will be based on minimum class size enrollment. The Mechanical Engineering Program will continually monitor student interest to expedite completion of the program of study.

Graduate Certificate in Software Engineering

Department of Cyber and Computer Sciences
843-953-5048
<http://www.citadel.edu/ccs>

Dr. Shankar Banik, Department Head
843-953-5039, shankar.banik@citadel.edu
Dr. Michael Verdicchio, Program Director
843-953-6987, mv@citadel.edu

Learning Outcomes

The Citadel's Graduate Certificate in Software Engineering is designed to provide its students with the knowledge, skills, and abilities associated with software engineering. By the end of this program, students will be able to:

- Demonstrate the use of good software development models and techniques
- Be able to evaluate alternative designs and architectures for a software application
- Demonstrate the ability to effectively work in a team

Admission Requirements

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of an official transcript reflecting the highest degree earned from a regionally accredited college or university.
3. Applicants are expected to have an undergraduate grade point average of 3.0.*
4. Approval from the Program Director or Department Head before registering for any graduate Computer Science (CSCI) courses.
5. Competency, demonstrated through course work, approved work experience, or a program-administrated competency exam, in the areas of basic Computer Architecture, Object-orientated Programing, Discrete Mathematics, and Data Structures.

*With the approval of the joint program admissions committee, students whose grade point average is less than 3.0 may be permitted to take up to six credit hours of courses in a non-degree seeking status and then apply for admission after successful completion of these courses.

All material must be received by the CGC office and reviewed by the department to receive consideration for admission to this graduate certificate program. Coursework is not to begin until admission has been granted into the program.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

Program Requirements

The Software Engineering certificate program consists of four, three credit hour courses totaling 12 graduate credit hours. At least 4 credit hours must be taken at each institution.

- CSCI-602—Foundations of Software Engineering
- CSCI-654—Software Requirements Analysis and Specifications
(Prerequisite: CSCI 602)
- CSCI-656—Software Systems Design and Implementations
(Prerequisite: CSCI 602)
- CSCI-658—Software Testing and Maintenance
(Prerequisite: CSCI 602)

Total Required Courses: 12 credit hours

Descriptions of courses are listed in the last section of this catalog.

Graduate Certificate in Sport Management

Department of Health & Human Performance

843-953-5060

www.citadel.edu/root/hess-programs/
graduate/graduate-certificate-sport-management

Dr. Stavros Triantafyllidis, Program Director
843-953-4852, striantaf@citadel.edu

The Graduate Certificate in Sport Management is comprised of five (5) courses that will enhance the student's breadth and depth of knowledge and skills in sport sales and marketing. These courses were specifically developed to broaden knowledge, skills, and abilities of working professionals in the field of sport management as well as provide such skills to students who wish to enhance their career marketability. In addition, graduate programs, such as the M.S. in Health, Exercise, and Sport Science and the M.A. in Sport Management at The Citadel, may accept these certificate program courses if admission is granted to both simultaneously.

Admission Requirements

Requirements and application procedures for admission into the Sport Management program:

1. Contact the Program Coordinator of the Sport Management Program.
2. Completion of the online graduate application along with the non-refundable application fee.
3. Submission of an official transcript of the baccalaureate degree from a regionally accredited college and university.
4. Submission of resume detailing previous work experience.
5. Submission of letter of intent addressing the following questions:
 - a. How have your past experiences prepared you for the graduate work in Sport Management?
 - b. How will your knowledge, skills, and attitudes contribute to the sport marketing/sales learning community?
 - c. What do you hope to gain if accepted to the Graduate Certificate in Sport Management Program?

All materials must be received by the CGC and evaluated by the department to receive consideration for entrance into the Sport Management Graduate Certificate Program. Coursework is not to begin until admission has been granted into the program.

Students accepted to the Master of Arts in Sport Management are automatically enrolled in this certificate program.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

Program Requirements

HESS-518—Sport Marketing
HESS-521— The Art of Selling in Sport
HESS-523—Administration and Leadership of Exercise and Sport Organizations
HESS-539—Sport Public Relations and Promotions
HESS-558—Advertising in Sport

Total Required Courses: 15 credit hours

Descriptions of courses are listed in the last section of this catalog.

Graduate Certificate in Structural Engineering

School of Engineering

843-953-5083

www.citadel.edu/root/cee-graduate-programs/structural-engineering

Dr. William J. Davis, P.E.

jeff.davis@citadel.edu

The Graduate Certificate in Structural Engineering program focuses on applied advanced engineering skills needed by today's practicing structural engineer. The courses are designed focused for immediate transference to design applications in the United States.

Admission Requirements

1. Successful applicants must meet the following criteria for admission into the Structural Engineering Graduate Certificate program.
2. Completion of the online graduate application along with the non-refundable application fee.
3. Submission of an official transcript of the baccalaureate degree directly from an ABET accredited engineering program or approved alternative.

*Students who have been admitted to the MSCE with a structural focus need to apply for the Structural Engineering Graduate Certificate program (application fee will not be required for those already admitted to the MSCE program).

All material must be received by the CGC office and evaluated by the department to receive consideration to the Structural Engineering Graduate Certificate program. An undergraduate civil engineering degree from an ABET accredited engineering is required or approval degree from the department head.

Program Requirements

Students are required to complete 12 hours of graduate study within a three-year period from the time of registration in their first civil engineering graduate course at The Citadel. Students who fulfill the program requirements will earn a Graduate Certificate in Structural Engineering.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

GRADUATION REQUIREMENTS (Course Requirements)

All degree candidates must:

1. File a plan of study outlining the intended areas of interest and listing the top four corresponding courses of interest
2. Complete four courses (12 hours) from the structural engineering areas of study below.

Structural Engineering

CIVL 504	Designing for Natural and Manmade Hazards
CIVL 608	Structural Loads and Systems
CIVL 610	Wood Design
CIVL 655	Masonry Structural Design
CIVL 657	Indeterminate and Matrix Structural Analysis
CIVL 711	Design of Masonry, Wood and Cold Formed Steel Structures
CIVL 712	Design of Coastal Structures and Bridges
CIVL 713	Design of Civil Engineering Systems for Natural and Manmade Hazards
CIVL 714	Advanced Steel Design
CIVL 715	Advanced Reinforced Concrete Design
CIVL 716	Analysis and Design of Prestressed Concrete Members
CIVL 718	Matrix and Finite Element Analysis
CIVL 719	Elastic Stability of Structures
CIVL 720	Dynamic Analysis of Structures
CIVL 721	Earthquake Engineering for Structural Engineers

Course/ Certificate Availability: The courses/ certificates will be offered based on student preferences/ overall demand indicated in your plan of study to be submitted after acceptance. Students should be aware course/ certificate offerings will be based on minimum class size enrollment. The Civil and Environmental Engineering Department will continually monitor student interest to expedite completion of your program of study.

Graduate Certificate in Student Affairs

Zucker Family School of Education

843-953-5097

www.citadel.edu/root/counselor-education-programs/graduate-certificate-in-student-affairs

Dr. Tara Hornor, tara.hornor@citadel.edu

Dr. Guy Ilagan, gilagan@citadel.edu

Dr. Aaron Oberman, Program Coordinator

obermana1@citadel.edu

Dr. George T. Williams, williamsg@citadel.edu

The Citadel Graduate College (CGC) and the Division of Counselor Education within the Zucker Family School of Education (SOE) is committed to principled educational leadership in higher education, making The Citadel the ideal place for offering a program that aims to prepare leaders in Student Affairs.

The Graduate Certificate in Student Affairs is designed to teach students aspiring to work (or currently working) in higher education how to:

- Use resources effectively to achieve institutional missions and goals;
- Establish high expectations for the learning process; and
- Equip individuals with the skills needed to engage students in active learning, while building supportive and inclusive communities within higher education institutions that help students develop coherent values and ethical standards.

Admission Requirements

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of an official transcript reflecting the highest degree earned from a regionally accredited college or university.

Once all admission requirements have been satisfied, the SOE Division of Counselor Education Admissions Committee will review the application, and the applicant will be notified of the admission decision. Coursework is not to begin until admission has been granted into the program.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

Program Requirements

The Student Affairs certificate program consists of four, three credit-hour courses totaling 12 graduate credit hours. Students may choose to enroll in 15 credit hours when including a practicum.

EDUC-537 - Student Development Services in Higher Education

EDUC-538 - Theories of Student Development in Higher Education

EDUC-539 - Higher Education Administration

EDUC-613 - Foundations of American Higher Education

EDUC-634 - Practicum in Student Affairs and College Counseling (optional)

Total Required Courses: 12 credit hours

Descriptions of courses are listed in the last section of this catalog.

Graduate Certificate in Systems Engineering Management

School of Engineering

843-953-9811

www.citadel.edu/root/pmgt-admission

Dr. David Greenburg

dgreenbu@citadel.edu

The Graduate Certificate in Systems Engineering Management (SEM) program provides a multidisciplinary approach to the management and delivery of complex projects and programs. The SEM course of instruction presents systems engineering as a well-developed body of knowledge, methodologies and techniques from a management perspective with application to a wide range of industries.

Admission Requirements

Successful applicants must meet the following criteria for admission into the SEM graduate certificate program.

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of an official transcript of the baccalaureate degree from a regionally accredited college or university.
3. Submission of resume detailing work experience, or permission of Department Head.
4. Submission a one-page letter of intent (form available at www.citadel.edu/graduatecollege/forms) that provides concise, complete answers to the following questions:
 - a. How has your experience prepared you for the SEM graduate courses?
 - b. How will your knowledge, skills and attitudes contribute to the SEM program's learning community?
 - c. What do you hope to gain from the SEM graduate certificate program?

All material must be received by the CGC office and evaluated by the Department of Engineering Leadership and Program Management (ELPM) to receive consideration for admission to the SEM graduate certificate program. An undergraduate engineering degree is not required. Coursework will not begin until admission has been granted into the program.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

Program Requirements

Students must complete three required courses and one of the elective courses identified below:

Required Courses:

- PMGT-680 Systems Engineering Management Fundamentals
- PMGT-681 Requirements Development and Management
- PMGT-682 System Verification and Validation

Elective Courses (Select one):

- PMGT-683 Systems Modeling and Integration
- PMGT-684 Human System Integration
- PMGT-685 Decision and Risk Analysis

Up to four courses in the SEM program may be used in completing the elective requirements for the Master of Science in Project Management. Please see your advisor for eligibility.

Students must complete their coursework with a grade point average (GPA) of 3.0 or better on hours earned in these four courses.

Total Required Courses: 12 credit hours

Descriptions of courses are listed in the last section of this catalog.

Graduate Certificate in Tactical Performance and Resiliency

Department of Health & Human Performance
www.citadel.edu/root/hhp-programs/
graduate/master-of-science-health-exercise-sport-
science

Dr. Chris Bellon, Program Director
843-953-1652, cbellon@citadel.edu

The Online Graduate Certificate in Tactical Performance and Resiliency empowers you to gain highly practical knowledge and skills for effectively training tactical athletes at the individual-level. Studying at your own pace through our online courses, you will expand your skills and knowledge well beyond that offered by professional certifications alone. You will graduate from this program effectively prepared to design and deliver effective tactical training programs for military service members, firefighters, law enforcement officers, and veterans on a one-on-one basis.

Admission Requirements

Requirements and application procedures for admission into the Online Graduate Certificate:

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of an official transcript of the baccalaureate degree from a regionally accredited college and university.
3. A one-page letter describing why you are interested in the Graduate Certificate in Tactical Performance and Resiliency.

All materials must be received by the CGC and evaluated by the department to receive consideration for the program. Coursework is not to begin until admission has been granted into the program.

GRADUATION REQUIREMENTS (non-credit bearing)

1. Darkness to Light Training
2. The Citadel Principled Leadership Seminar – LDRS 500
3. Students in this program must demonstrate having earned the credential of Certified Personal Trainer from either the National Strength and Conditioning Association or The American College of Sports Medicine
4. Proof of current Certification in First Aid and CPR
5. Proof of current Certification in Mental Health First Aid

Program Requirements

The Graduate Certificate in Tactical Performance and Resiliency will consist of eighteen (18) semester credit hours from courses delivered online. An optional On-Site Practicum course can be completed at The Citadel, which will provide in-depth, real-world application of the content covered in the online courses. Successful completion of the On-Site Practicum allows you to earn The Citadel's Certificate in Tactical Performance & Resiliency with Distinction.

Required Courses

PSYC-516	Psychological Resiliency for Tactical Athletes
TAPR-600	Fundamentals of Applied Functional Anatomy & Physiology*
TAPR 601	Introduction to Human Performance
TAPR 610	Applied Exercise Physiology and Nutrition
TAPR 640	Tactical Strength and Conditioning
TAPR 699	Capstone Internship in Tactical Performance & Resiliency

Optional Course (credit bearing)
TAPR 695 On-site practicum

*Course may be waived with proof of recent, satisfactory completion of two semesters of undergraduate human anatomy and physiology from an accredited college or university.

Total Required Courses: 18 credit hours

Descriptions of courses are listed in the last section of this catalog.

Graduate Certificate in Technical Program Management

School of Engineering

843-953-9811

www.citadel.edu/root/pmgt-admission

Dr. David Greenburg

dgreenbu@citadel.edu

Mission Statement

The mission of the Technical Program Management (TPgM) graduate certificate program is to educate and prepare technical professionals to serve as program and portfolio managers and leaders.

Admission Requirements

Successful applicants must meet the following criteria for admission into the TPgM graduate certificate program.

1. Completion of the online graduate application along with the application fee.
2. Submission of an official transcript of the baccalaureate degree directly from a regionally accredited college or university.
3. Submission of resume detailing work experience.
4. Submission of a one-page letter of intent that provides concise, complete answers to the following questions:
 - a. How has your experience prepared you for the TPgM graduate courses?
 - b. How will your knowledge, skills and attitudes contribute to the TPgM program's learning community?
 - c. What do you hope to gain from the TPgM graduate program?

All material must be received by the CGC office and evaluated by the Department of Engineering Leadership and Program Management (ELPM) to receive consideration for admission to the TPgM Graduate Certificate program. An undergraduate engineering degree is not required.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

Program Requirements

Students are required to complete 12 hours of graduate study within a two-year period from the time of registration in their first TPgM graduate course at The Citadel. Students who fulfill the program requirements will earn a Graduate Certificate in Technical Program Management (TPgM).

The required courses for the TPgM Graduate Certificate Program are:

- PMGT-660: Overview of Technical Program Management
- PMGT-661: The Legal and Contractual Aspects of Program Management
- PMGT-662: Program Development Strategies and Processes
- PMGT-685: Decision and Risk Analysis

Up to four courses in the TPgM Certificate program may be used in completing the elective requirements for the Master of Science in Project Management. Please see your advisor for eligibility.

Students must complete their coursework with a grade point average (GPA) of 3.0 or better on hours earned in these four courses.

Total Required Courses: 12 credit hours

Descriptions of courses are listed in the last section of this catalog.

Graduate Certificate in Technical Project Management

School of Engineering

843-953-9811

www.citadel.edu/root/pmgt-admission

Dr. David Greenburg

dgreenbu@citadel.edu

Mission Statement

The mission of the Technical Project Management (TPM) graduate certificate program is to educate and train the next generation of technical and professional project managers and leaders.

Admission Requirements

Successful applicants must meet the following criteria for admission into the TPM graduate certificate program.

1. Completion of the online graduate application along with the non-refundable application fee.
2. Submission of an official transcript of the baccalaureate degree directly from a regionally accredited college or university.
3. Submission of resume detailing work experience.
4. Submission of a one-page letter of intent that provides concise, complete answers to the following questions:
 - a. How has your experience prepared you for the TPM graduate courses?
 - b. How will your knowledge, skills and attitudes contribute to the TPM program's learning community?
 - c. What do you hope to gain from the TPM graduate program?

*Students who have been admitted to the MSPM are automatically enrolled in the TPM Graduate Certificate program.

All material must be received by the CGC office and evaluated by the Department of Engineering Leadership and Program Management (ELPM) to receive consideration for admission to the TPM Graduate Certificate program. An undergraduate engineering degree is not required. Applicants enrolled in the Master of Science in Project Management are automatically enrolled in this certificate program.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

Program Requirements

Students are required to complete 12 hours of graduate study within a two-year period from the time of registration in their first TPM graduate course at The Citadel. Students who fulfill the program requirements will earn a Graduate Certificate in Technical Project Management. The four courses in the TPM Certificate Program are required core courses for completing the requirements for the Master of Science in Project Management.

The required courses for the TPM Graduate Certificate Program are:

- PMGT-650: Overview of Technical Project Management
- PMGT-651: Technical Project Planning and Scheduling
- PMGT-652: Applications of Quality Management
- PMGT-653: Technical Project Support and Operations

Students must complete their coursework with a grade point average (GPA) of 3.0 or better on hours earned in these four courses.

Total Required Courses: 12 credit hours

Descriptions of courses are listed in the last section of this catalog.

All students are required to complete a capstone project that spans the four TPM courses.

A formal presentation of the completed capstone project will be made upon completion of PMGT 653. Students are also expected to present their capstone project to industry professionals.

Graduate Certificate in Transportation Engineering

School of Engineering,
843-953-5083

www.citadel.edu/root/cee-graduate-programs/transportation-engineering

Dr. William J. Davis, P.E.
jeff.davis@citadel.edu

The Graduate Certificate in Transportation Engineering program focuses on applied advanced engineering skills needed by today's practicing transportation engineer. The courses are designed focused for immediate transference to design applications in the United States.

Admission Requirements

1. Successful applicants must meet the following criteria for admission into the Transportation Engineering Graduate Certificate program.
2. Completion of the online graduate application along with the non-refundable application fee.
3. Submission of an official transcript of the baccalaureate degree directly from an ABET accredited engineering program or approved alternative.

*Students who have been admitted to the MSCE with a transportation focus need to apply for Transportation Engineering Graduate Certificate program (application fee will not be required for those already admitted to the MSCE program).

All material must be received by the CGC office and evaluated by the department to receive consideration to the Transportation Engineering Graduate Certificate program. An undergraduate civil engineering degree from an ABET accredited engineering is required or approval degree from the department head.

Program Requirements

Students are required to complete 12 hours of graduate study within a three-year period from the time of registration in their first civil engineering graduate course at The Citadel. Students who fulfill the program requirements will earn a Graduate Certificate in Transportation Engineering.

GRADUATION REQUIREMENTS (non-credit bearing)

- Darkness to Light Training
- The Citadel Principled Leadership Seminar – LDRS 500

GRADUATION REQUIREMENTS (Course Requirements)

All degree candidates must:

1. File a plan of study outlining the intended areas of interest and listing the top four corresponding courses of interest
2. Complete four courses (12 hours) from the transportation engineering areas of study below.

Transportation Engineering

CIVL 506	Geographic Information Systems
CIVL 575	Traffic Engineering Operations
CIVL 576	Roadway Geometric Design
CIVL 612	Urban Transportation Planning
CIVL 640	Urban Mobility Infrastructure Policy and Planning
CIVL 642	Public Health, Physical Activity, and Design of the Built Environment
CIVL 740	Transportation Safety Engineering
CIVL 741	Travel Demand Forecasting

Course/ Certificate Availability: The courses/ certificates will be offered based on student preferences/ overall demand indicated in your plan of study to be submitted after acceptance. Students should be aware course/ certificate offerings will be based on minimum class size enrollment. The Civil and Environmental Engineering Department will continually monitor student interest to expedite completion of your program of study.

EVENING/ONLINE
UNDERGRADUATE
DEGREE PROGRAMS

Bachelor of Arts in Criminal Justice

Department of Criminal Justice

843-953-0319

www.citadel.edu/root/eveningundergraduatestudies-2-2-programs/criminal-justice

Dr. Robert McNamara

bob.mcnamara@citadel.edu

The 2 + 2 program/degree completion program in criminal justice was created to provide students with an opportunity to receive a four-year degree from The Citadel online. The requirements for the major consist of a total of 65 general elective credit hours and 55 upper division credit hours. According to Citadel policy, students must complete their last 36 hours at The Citadel. 45 credit hours in the major and 15 credit hours of elective courses, 36 of which must be taken at The Citadel.

Mission Statement

The mission of the Criminal Justice program is to foster an intellectually stimulating educational experience that prepares students to work within the criminal justice system and its related fields, as well as laying the academic foundation for graduate study. This is accomplished by developing students' understanding of the causes of crime, which includes a grasp of the larger social context in which crime occurs, the operation and effectiveness of agencies within the criminal justice system, as well as developing students' analytical skills that enable them to conduct and evaluate criminal justice-related research.

Expected Student Learning Outcomes

Upon completion of the program, students should generally possess:

- An understanding of the theories relating to crime causation and criminality
- An understanding of the interdisciplinary nature of the criminal justice system
- Skills that enable the student to conduct and evaluate criminal justice-related research
- Advanced reading, writing, and verbal communication skills
- An understanding of administrative principles and practices found in criminal justice agencies

Admission Requirements

1. Completion of the online undergraduate application.
2. Submission of all official transcripts from regionally accredited colleges or universities attended. Courses with a grade of C or higher will be considered for transfer to The Citadel. All transcripts must be received in order for the application to be complete and reviewed.

Students may begin taking Citadel courses at any time as long as 24 college credit hours have been transferred to The Citadel and prerequisites have been met.

2+2 Transfer Articulation from South Carolina Technical Colleges

Please note that the table below is only an advising tool with a suggested sequence of courses for students who are beginning their college coursework within the South Carolina Technical College System with the intent to transfer to The Citadel. The Citadel's degree completion programs offer significant flexibility with course selection and transfer credits that provides additional choices as noted in the official degree completion program of study.

Program of Study

Courses Taken at a South Carolina Technical College (or equivalent): 65 credit hours

Writing/English Composition (six hours)

Humanities/Foreign Language (six hours)

History (six hours)

Mathematics (six hours)

Physical Science (eight hours)

Courses must have lab, not necessarily sequential

Social Science (six hours)

Criminal Justice Major (six hours)

CRJ-101 Introduction to Criminal Justice	3
CRJ-125 Criminology	3

Lower Division Electives 21 hours (Any Courses Apply)

Recommended for technical college CRJ Students

CPT-101 Intro to Computers
CRJ-120 Constitutional Law
CRJ-130 Police Administration
CRJ-210 Juvenile and the Law
CRJ-220 Judicial Process
CRJ-236 Criminal Evidence
CRJ-242 Correctional Systems

Recommended for technical college AA Students

CPT-101 Intro to Computers
Oral Communications
Literature
Humanities/Social Sciences/Communication

Courses Taken at The Citadel: 55 credit hours

EUGS-101-Introduction to The Citadel Experience 1
(Must be taken in first semester at The Citadel)

Required courses if not taken at a technical college

CRMJ-201 Intro to Criminal Justice 3
CRMJ-202 Criminology 3

Required Courses

CRMJ-370 Police Systems 3
CRMJ-380 Corrections 3

Upper Level Elective Courses in the Major: 33 Credit Hours

(Must be at 300 level or higher)

Note: CRMJ-201 is a prerequisite for all criminal justice courses except CRMJ-202. Students may choose from the following list of upper level elective courses in criminal justice.

CRMJ-330 Emergency Management 3
CRMJ-331 Cyber Investigations 3
CRMJ-332 Comparative Homeland Security 3
CRMJ-333 Immigration and Security 3
CRMJ-371 Criminal Law 3
CRMJ-372 Critical Issues in Law Enforcement 3
CRMJ-373 Criminal Evidence 3
CRMJ-375 Criminal Justice Administration 3
CRMJ-381 Organized Crime 3
CRMJ-382 Drugs and Crime 3
CRMJ-383 Comparative Criminal Justice Systems 3
CRMJ-384 International Crime 3
CRMJ-385 Juvenile Delinquency 3
CRMJ-386 Research Methods in Criminal Justice 3
CRMJ-387 Criminal Investigation 3
CRMJ-388 White Collar Crime 3
CRMJ-389 Justice in Latin America 3
CRMJ-390 Victimology 3
CRMJ-391 Criminalistics 3
CRMJ-392 Computer Crime 3
CRMJ-393 Homicide 3
CRMJ-465 Special Topics in Criminal Justice 3
CRMJ-470 Ethics 3
CRMJ-471 Psychology of Crime 3
CRMJ-472 Crime Prevention 3
CRMJ-498 Independent Study 3
CRMJ-499 Internship 3
INTL-210 Homeland Security 3
INTL-310 Intelligence Collection Systems & Programs 3
INTL-311 US Intelligence Systems & Failures 3

Three of the following courses can count as an upper level elective in the major:

Electives: (three courses, nine credit hours)

PSCI-302 Urban Politics 3
PSCI-310 Domestic Terrorism 3
PSCI-311 The Civil Rights Movement & American Politics 3

PSCI-342 International Terrorism 3
PSCI-361 Law and Legal Process 3
PSCI-392 Political Theory 3
PSCI-401 Public Policy Process 3
PSCI-461 Issues in Contemporary Constitutional Law 3
PSCI-462 Constitutional Law: Civil Rights & Liberties 3
SOCJ-201, 202 and any 300-400 level course in sociology

Credit for CRMJ-498 (Independent Study) and CRMJ-499 (Internships): Approval is required from the participating faculty member, the 2 + 2 program director, and the Associate Provost and Dean of Online Undergraduate Studies. Non 2+2 students' transfer credit will be evaluated according to Citadel policy.

Upper Level Elective Courses: 15 Credit Hours

(Must be courses at the 300-400 level)

Total Credit Hours: 120 credit hours

Bachelor of Arts in Intelligence & Security Studies

Department of Intelligence & Security Studies

843-953-6886

www.citadel.edu/root/eveningundergraduatestudies-2-2-programs/intelligence

Dr. Carl Jensen

cjensen1@citadel.edu

The 2 + 2 program/degree completion program in intelligence and security studies was created to provide students with an opportunity to receive a four-year degree from The Citadel online. The requirements for the major consist of a total of 59 general elective credit hours and 61 upper division credit hours. According to Citadel policy, students must complete their last 36 hours at The Citadel, 42 credit hours in the major and 18 credit hours of elective courses, 36 of which must be taken at The Citadel.

Mission Statement

The mission of the Intelligence & Security Studies program is to foster an intellectually stimulating educational experience that prepares students to work within the intelligence and security studies community and its related fields, as well as laying the academic foundation for graduate study. This is accomplished by developing students' understanding, knowledge, skills, and abilities valued by the U.S. Intelligence Community (IC). This major seeks to develop each student's capabilities for critical thinking and systematic analysis and is designed to increase the student's knowledge of effective leadership for national security.

Expected Student Learning Outcomes

Upon completion of the program, students should generally possess:

- An understanding of global and national threats to U.S. security;
- Knowledge of organizational structures and operations of civilian and military intelligence agencies;
- An understanding of national and international intelligence and security strategies;
- Knowledge of intelligence management principles, tools, and applications;
- An understanding of leadership principles as they apply to military and civilian intelligence agencies;
- An understanding of the role of ethics and integrity for intelligence and security professionals;
- The ability to perform tactical, operational, and strategic analysis;
- An understanding of collection strategies in military and civilian intelligence;
- Knowledge of global, national, and regional threats to security;

- The ability to utilize critical thinking skills in all areas of collection and analysis;
- Enhanced written and oral skills in communicating intelligence findings to policy/decision makers at all levels;
- An understanding of the functional areas of intelligence (collection, analysis, counterintelligence, covert action, and intelligence management) and how each can advance national objectives;
- The ability to collaborate and work effectively in teams;
- Knowledge of the principles and fundamentals of cybersecurity.

Admission Requirements

1. Completion of the online undergraduate application.
2. Submission of all official transcripts from regionally accredited colleges or universities attended. Courses with a grade of C or higher will be considered for transfer to The Citadel. All transcripts must be received in order for the application to be complete and reviewed.

Students may begin taking Citadel courses at any time as long as 24 college credit hours have been transferred to The Citadel and prerequisites have been met.

Program of Study

Courses Taken at a South Carolina Technical College (or equivalent): 59 credit hours

Writing/English Composition (six hours)

Fine Arts/Humanities/Ethics/Foreign Language/other courses with significant cross-cultural content (six hours)

History (six hours)

Mathematics (six hours)

Physical Science (eight hours)

Courses must have lab, not necessarily sequential

Social Science (six hours)

Lower Division Electives 21 hours (Any Courses Apply)

Courses Taken at The Citadel: 61 credit hours

EUGS-101-Introduction to The Citadel Experience 1
(Must be taken in first semester at The Citadel)

Required Core Courses: 18 credit hours

CSCI 227 Introduction to Cybersecurity	3
INTL 201 Introduction to Intelligence Studies	3
INTL 210 Homeland Security	3
INTL 301 Advanced Analytics I	3
INTL 302 Advanced Analytics II	3
INTL 310 Intelligence Collection Systems & Programs	3

**General Intelligence Elective Courses in the Major:
24 credit hours**

ANTH 202 Cultural Anthropology	3
BIOL 207 Bioterrorism	3
CRMJ 331 Cyber Investigations	3
CRMJ 332 Comparative Criminal Justice Systems	3
CRMJ 333 Immigration and Security	3
CRMJ 381 Organized Crime	3
CRMJ 384 International Crime	3
CRMJ 392 Computer Crime	3
CSCI 327 Computer Security	3
CSCI 427 Advanced Cybersecurity	3
GEOG 301 Introduction to Geographic Information Systems	3
GEOG 311 Economic Geography	3
HIST 206 History of the Non-Western World	3
HIST 326 Europe Since 1914	3
HIST 356 The History of Africa	3
HIST 362 Modern Middle East	3
HIST 388 U.S. Foreign Relations since 1898	3
HIST 389 The Global Cold War, 1917-1991	3
INTL 311 Intel Successes and Failures	3
INTL 312 America's Drone Campaign Since 9/11	3
INTL 401 Intelligence Support to Military Operations	3
INTL 402 The Military Instrument of Power	3
INTL 464 Intelligence Internship	3
INTL 465 Special Topics in Intelligence	3
PSCI 310 Domestic Terrorism	3
PSCI 332 National Security Policy	3
PSCI 336 Russia and the Commonwealth of Independent States	3
PSCI 339 Middle Eastern Affairs	3
PSCI 342 International Terrorism	3
PSCI 346 Multinational Peacekeeping	3
PSCI 401 Political Issues and Public Policy	3
PSCI 431 American Foreign Relations	3
PSCI 433 Topics in International Politics	3

**Students are required to take six upper level (300+)
elective courses outside of General Intelligence Elective
Course List:
18 credit hours**

Total Credit Hours: 120

Bachelor of Arts in Political Science

Department of Political Science

843-953-5072

www.citadel.edu/root/eveningundergraduatestudies-2-2-programs/political-science

Dr. Dubose Kapeluck, Department Head

843-953-2037

dubose.kapeluck@citadel.edu

Brad Collins, Advisor

843-953-4852

collinsb1@citadel.edu

Mission Statement

The mission of the 2+2/degree completion program in Political Science is to foster an intellectually stimulating experience that prepares students to work within political science and its related fields as well as laying the academic foundation for graduate study.

Majoring in political science affords students an opportunity to obtain a broad liberal arts education that enriches their lives and acquaints them with the rights and responsibilities of citizenship. As a central element of a liberal arts education, political science provides preparation for graduate education and for the pursuit of useful and satisfying careers.

While our faculty represents a wide variety of theoretical and methodological approaches, we share a strong interest in solving the puzzles of contemporary political life. In carrying out its teaching mission, the political science faculty is devoted to providing individualized attention aimed at encouraging students to enhance their critical-thinking and problem-solving skills while further honing real-life skills related to reading, writing, listening and speaking.

Admission Requirements

1. Completion of the evening undergraduate application.
2. Submission of all official transcripts from regionally accredited colleges or universities attended. Courses with a grade of C or higher will be considered for transfer to The Citadel. All transcripts must be received in order for the application to be complete and reviewed.

Students may begin taking Citadel courses at any time as long as 24 college credit hours have been transferred to The Citadel and prerequisites have been met.

2+2 Transfer Articulation from South Carolina Technical Colleges

Please note that the table below is only an advising tool with a suggested sequence of courses for students who are beginning their college coursework within the South Carolina Technical College System with the intent to transfer to The Citadel. The Citadel's degree completion programs offer significant flexibility with course selection and transfer credits that provides additional choices as noted in the official degree completion program of study.

Program of Study

Courses taken at a South Carolina Technical College (or equivalent): 65 credit hours

Writing/English Composition (6 hours)

Humanities/Foreign Language (6 hours)

History (6 hours)

Mathematics (6 hours)

Science (8 hours with lab, not necessarily sequential)

Social Science (9 hours)

PSC 201 American Gov. 3

PSC 215 State and Local Gov. 3

ECO 210 Macroeconomics 3

Lower Division Electives (24 hours)

(Recommended Courses; Any Transferable Courses

Apply)

Oral Communication 3

CPT 101 Introduction to Computers 3

SOC 101 Introduction to Sociology 3

PSC 220 Introduction to International Relations 3

CRJ 125 Criminology 3

Any courses in Humanities/Social Sciences/Communication
(for a total of 9 hours)

Total Credit Hours at a Technical College: 65

Courses taken at The Citadel: 52 credit hours

EUGS 101-Introduction to The Citadel Experience 1
(must be taken in first semester at The Citadel)

Required Major Courses: 6 hours

PSCI 361 Law and Legal Process 3

PSCI 461 Powers of Government 3

American Politics Electives: 15 hours

PSCI 301 American Parties and Politics 3

PSCI 302 Urban Politics 3

PSCI 304 American Political Thought 3

PSCI 305 American Presidency 3

PSCI 306 Legislative Process	3
PSCI 307 Southern Politics	3
PSCI 308 Public Opinion	3
PSCI 310 Domestic Terrorism	3
PSCI 311 The Civil Rights Movement and American Politics	3
PSCI 371 Leadership in Politics	3
PSCI 393 Research Methods in Political Science	3
PSCI 396 Politics and the Media	3
PSCI 402 Politics of Bureaucracy	3
PSCI 403 Topics in American Government and Politics	3
PSCI 431 American Foreign Relations	3
PSCI 492 Special Topics in Political Science: Modern Ideologies	3
PSCI 498 Independent Study*	3
PSCI 499 Internship*	3

Pre-Law and Legal Studies Subfield Electives: 12 hours

PSCI 304 American Political Thought	3
PSCI 311 The Civil Rights Movement and American Politics	3
PSCI 331 International Law	3
PSCI 393 Research Methods in Political Science	3
PSCI 402 Politics of Bureaucracy	3
PSCI 463 Topics in Law and Legal Studies	3
PSCI 498 Independent Study*	3
PSCI 499 Internship*	3
SOCI 201 Introduction to Sociology	3
CRMJ 202 Criminology	3
ENGL 411 Writing in the Professions	3
BADM 211 Introduction to Financial Accounting/Reporting	3
CRMJ 465 Special Topics in Criminal Justice	3
CRMJ 371 Criminal Law**	3
CRMJ 373 Criminal Evidence	3

*Credit for PSCI 498 (Independent Study) and PSCI 499 (Internship): Approval is required from the participating faculty member, the 2 + 2 program director, and the Associate Provost and Dean of The Citadel Graduate College or designee.

**CRMJ 371 Criminal Evidence may not be taken for credit if student took CRJ 115 Criminal Law I at TTC (see Fifth Semester Spring)

Departmental Elective: 3 hours
Any course with an ANTH, PSCI, SOCI prefix

Upper Level Elective Courses in Major: 15 hours
Must be courses at the 300-400 level.

Total Credit Hours at The Citadel: 52

Total Program Credit Hours: 117

Bachelor of Science in Business Administration

Tommy and Victoria Baker School of Business
843-953-5056 www.citadel.edu/finishmyba

Jeremy Bennett, Ph.D.
Undergraduate Completion Program Director
Jbennet5@citadel.edu

Brian Tucker, M.F.A.
Undergraduate Completion Advisor
843-953-5257, btucker2@citadel.edu

Mission Statement

The mission of the Tommy and Victoria Baker School of Business is to educate and develop leaders of principle to serve a global community.

Program Description

The Citadel's Bachelor of Science in Business Administration is a degree completion program offering upper level business and elective courses in the evening and online. Veteran students may take up to two classes during the day per semester. During summer semester, additional general education and lower level business courses may be available.

Students take freshman and sophomore level courses at a South Carolina (SC) technical college and attend The Citadel for their junior and senior level courses. Students may begin taking Citadel courses at any time as long as 24 college credit hours have been transferred to The Citadel and prerequisites have been met. Students planning to enroll at The Citadel with the minimum credit hours are encouraged to complete English Composition I and II, College Algebra, Probability and Statistics, Micro and Macroeconomics, Financial and Managerial Accounting, and Introduction to Computers.

Admission Requirements

For admission to The Citadel's portion of the program, students must:

1. Complete the degree completion undergraduate application.
2. Submit all official transcripts from regionally accredited colleges or universities attended. Courses with a grade of C or higher will be considered for transfer. All transcripts must be received in order for the application to be complete and reviewed.
3. Complete the designated courses with an approved technical college or equivalent with a grade of C or higher and have a minimum grade point average of 2.0.

Program of Study

The Business Administration program consists of 62 hours of general education and lower division courses at a SC technical college, 46 credit hours of upper division courses at The Citadel, and 12 credit hours of elective courses taken at a technical college, The Citadel or another institution. To earn a degree from The Citadel, a minimum of 36 institutional credit hours must be completed.

Courses Taken at a SC technical college (or equivalent): 74 credit hours

Writing/English Composition (6 hours)

ENG-101 English Composition I	3
Additional Composition or English Course	3

Humanities/Foreign Language (6 hours)

Any Two Non- Remedial
Humanities or Foreign Language Courses

Mathematics (6 hours)

MAT-109 College Algebra with Modeling	3
or	
MAT-110 College Algebra	3
Additional Math or Statistics Course	

History (6 hours)

Any Two Non- Remedial
History Courses

Physical Science (8 hours)

Courses must have lab and need not be sequential
Any Two Non- Remedial
Lab Science Courses

Social Science (6 hours)

ECO-210 Macroeconomics	3
ECO-211 Microeconomics	3

Business Major Courses (9 hours)

MAT-120 Probability & Statistics	3
ACC-101 Accounting Principles I	3
ACC-102 Accounting Principles II	3

Electives taken at a SC technical college, The Citadel or another institution (27 hours)

Any non-remedial course

Courses Taken at The Citadel: 46 credit hours

EUGS 101-Introduction to The Citadel Experience
(Must be taken in first semester at The Citadel) 1

Business Major Requirements: (27 Credit Hours)

BADM/COMM-216 Communication in Business	3
BADM-110 Computer Applications in Business	3
BADM-305 Legal & Ethical Environment of Business	3
BADM-309 Marketing Principles	3
BADM-310 Production & Operations Management	3
BADM-321 Business Finance	3
BADM-338 Management & Org. Behavior	3
BADM-371 Leadership in Organizations	3
BADM-422 Strategic Management	3

Business Electives (12 Hours)

Non-Remedial Courses in
Management
Hospitality Management
Construction Management
Supply Chain Management
Logistics
Business
Accounting
Marketing

Upper Level General Electives (6 hours)

Courses may be any 300 or 400 level course offered in the evening or online at The Citadel. Students must have the required prerequisites in order to register for the course.

Total Credit Hours: 120

Bachelor of Science in Nursing

Swain Department of Nursing

843-953-1630

www.citadel.edu/root/eveningundergraduatestudies-
2-2-programs/nursing

Amelia Joseph, PhD, RN

Department Head and Program Director

ajoseph1@citadel.edu

Mission

The mission of the Nursing Program is to educate and develop our students to become principled leaders in the health care environment and profession of nursing by incorporating the core values of The Citadel of honor, duty and respect into the learning experience.

Program Description

The 2 + 2 program/degree completion program in nursing was created to provide students with an opportunity to receive a four-year degree from The Citadel in the evening. The requirements for the major consist of a total of 60 upper division credit hours: 38 credit hours in the major and nine credit hours of inter-professional health related courses and 12 elective credit hours, 9 of which must be in an approved health-related course.

Expected Student Learning Outcomes

The purpose of The Citadel nursing program is to prepare nurses at the baccalaureate level to assume leadership roles within the healthcare team, providing for quality and safe practice in a complex health care environment. Specifically, students will:

- Apply the principles of a liberal education to the practice of nursing by incorporating scientific evidence and using creative and critical thinking skills for the safe and effective of care of individuals, families, and communities.
- Demonstrate intercultural knowledge and competence of individual and family centered care in the practice of nursing by understanding the importance of eliciting individual values, preferences and needs as part of the overall assessment process and creating a plan of care that addresses the unique needs of the individual.
- Use inquiry and analysis to provide a complete biopsychosocial assessment of individuals and facilitates their care through a complex health system.
- Communicates effectively verbally and in writing with individuals, families and other members of the healthcare team to promote safe care and a safe work environment.
- Understand and apply intercultural knowledge and competence in health promotion and disease prevention to individuals, families, communities and the global world throughout the health continuum.

- Understand the role of the professional nurse relative to health finance and regulatory policies. Uses quantitative literacy to measure the impact on health outcomes.
- Use ethical reasoning and action in understanding the professional values of human dignity, integrity, social justice, altruism and autonomy within legal and ethical boundaries in order to maximize patient safety and optimize quality care.

Admission Requirements

1. Completion of the evening undergraduate application.
2. A cumulative GPA of 3.0 or higher. Applicants with a cumulative GPA of 2.8 – 2.99 may be considered for admission.
3. Completion of the required prerequisite courses from an accredited technical college or other accredited colleges or universities.
4. Submission of all official transcripts directly from colleges/universities attended. Courses with a grade of C or higher will be considered for transfer to The Citadel. All transcripts must be received in order for the application to be complete and reviewed.
5. Completion of the questionnaire and written essay.

The Bachelor of Science in Nursing (BSN) program requires 60 credit hours of general education and nursing prerequisite courses. These courses will typically be taken at another institution for transfer. The student must complete the required courses with a minimum of a “C” grade in each course: two semesters of English; one semester of history; two semesters of general chemistry with a lab; two semesters of anatomy and physiology with a lab; one semester of general biology with a lab; one semester of microbiology with a lab. It is preferred that applicants also have the following social science courses: psychology, developmental psychology, and sociology. These courses may be taken concurrently with Citadel courses but must be completed before the start of the fourth semester.

Program of Study

Courses Taken at South Carolina Technical College (or equivalent): 60 Credit Hours

Writing/English Composition (6 hours)	6
History (3 hours)	3
Mathematics (6 hours)	
College Algebra	3
Statistics	3
Science (24 hours)	
Anatomy and Physiology I + Lab	4
Anatomy and Physiology II + Lab	4
College Chemistry I + Lab	4
College Chemistry II + Lab	4
General Biology + Lab	4
Microbiology + Lab	4
Social Science (9 hours)	
General Psychology	3
Human Growth and Development	3
Sociology	3
*Preferred that applicants have these social science courses. May be taken concurrently with Citadel courses. Must be completed before start of fourth semester.	
Electives (12 hours)	12

Courses Taken at The Citadel: 60 Credit Hours

EUGS 101 Introduction to The Citadel Experience (Must be taken in first semester at The Citadel)	1
Required Courses (50 credit hours)	
BIOL 340 Pathophysiology	3
BIOL 341 Pharmacology	3
HLED 401 Nutrition	3
NURS 200 Introduction to Nursing	2
NURS 201 Health Assessment	4
NURS 202 Fundamentals of Nursing	4
NURS 301 Adult Health I	3
NURS 302 Adult Health II	3
NURS 311 Adult Health I Clinical	2
NURS 312 Adult Health II Clinical	2
NURS 401 Maternal and Child Health	3
NURS 402 Mental Health and Community	3
NURS 403 Evidence Based Practice	3
NURS 404 Leadership	3
NURS 405 Adult Health III Capstone	3
NURS 411 Maternal and Child Health Lab	2
NURS 412 Mental Health and Community Lab	2

NURS 415 Adult Health III Clinical

2

Upper Level Elective Courses: (9 Credit Hours)

Must be at 300 level or higher with 9 hours taken in a health-related topic. Students are strongly encouraged to take Gerontology, Health Policy, and Comparative Health Care Systems.

Total Credit Hours: 120

Bachelor of Science in Social Studies Education

Zucker Family School of Education

843-953-5097

www.citadel.edu/root/teacher-education

Program Coordinator and Education Advisor:

Dr. Tammy Graham Ed.D.,

tammy.graham@citadel.edu

Social Studies Advisor:

Dr. Katherine Grenier, grenierk@citadel.edu

The 2 + 2 program/degree completion program in Social Studies Education was created to provide students with an opportunity to receive a four-year degree leading to initial Teacher Licensure from The Citadel in the evening. The requirements for the major consist of a total of 123-125 hours, 58 of which are completed at The Citadel. This includes 36 credit hours in the major, 21 credit hours of elective courses, and a one-hour orientation course.

Mission and Expected Student Learning Outcomes

The purpose of the Zucker Family School of Education's undergraduate programs is to serve the people of the Lowcountry, the state of South Carolina, the Southeast, and the nation by providing programs that prepare highly qualified individuals who are knowledgeable about the learning process; learners and who are effective, ethical, and reflective educators prepared to assume leadership roles in the profession and community. Further, with a focus toward learner-centered education, they are effective in educating a diverse learner population to high academic standards.

Admission Requirements

1. Completion of the evening undergraduate application at The Citadel.
2. Submission of all official transcripts from regionally accredited colleges or universities attended. Courses with a grade of C or higher will be considered for transfer to The Citadel. All transcripts must be received in order for the application to be complete and reviewed.
3. Meet with Citadel advisors.

2+2 Transfer Articulation from South Carolina Technical Colleges

Please note that the table below is only an advising tool with a suggested sequence of courses for students who are beginning their college coursework within the South Carolina Technical College System with the intent to transfer to The Citadel. The Citadel's degree completion programs offer significant flexibility with course selection and transfer credits that provides additional choices as noted in the official degree completion program of study.

Students may begin taking Citadel courses at any time as long as 24 college credit hours have been transferred to The Citadel and prerequisites have been met.

Program of Study

Courses Taken at South Carolina Technical College (or equivalent): 65-67 hours

General Education: 38 Hours

Writing/English Composition (6 hours)

Humanities/Foreign Lang. (6 hours)

History (12 hours)

Mathematics (6 hours)

Physical Science (8 hours)

Courses must have lab, not necessarily sequential

Social Science: 12 hours

ECO 210 Macroeconomics	3
PSC 201 American Gov.	3
PSY 201 General Psychology	3
SOC 101 Intro to Sociology	3

Lower Division Electives: 15-17 hours

(Any Transferable Courses Apply)

Recommended for technical college AA Students

Oral Communication	3
CPT 101 Introduction to Computers	3

Courses Taken at The Citadel: 58 Credit Hours

EUGS 101-Introduction to The Citadel Experience	1
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(Must be taken in first semester at The Citadel)

Required Major Courses: 36 Hours

EDUC 101 Education in Modern Society	3
EDUC 202 Educational Psychology	3
EDUC 206 Adolescent Development	3
EDUC 312 Learners with Exceptionalities	3
EDUC 301 Foundations in Reading	3

EDUC 401 Methods and Materials of Middle and High School Teaching	3
EDUC 306 Teaching Reading and Writing in the Middle and High School	3
EDUC 402 Special Methods in Teaching	3
EDUC 499 Teaching Internship	12

Required Social Studies Courses: 12 Hours

ANTH 202 Cultural Anthropology	3
GEOG 209 World Geography	3
PSCI 302 Urban Politics	3
HIST 206 Social and Cultural History of the Non-Western World	3

Approved Electives: 9 Hours

One – 3 Hour History Elective (200 level and above)
 Two – 3 hour Social Studies Electives (200 level and above) (Economics, History, Political Science or Psychology)

Total Program Credit Hours: 123-125

Admission to Upper Level Education Courses

To be admitted to upper level Education courses, the teacher candidate must have the support of his or her advisor relative to suitability and interest in teacher education and must also have:

1. Official passing scores on all three parts of PRAXIS Core exams on file at The Citadel.
2. A cumulative Grade Point Average of 2.750 or higher on coursework taken at The Citadel.
3. Successful completion of EDUC 101.

Admission to the Student Teaching Internship (EDUC 499)

Teacher candidates must make a formal application for admission to the student teaching internship to both The Citadel and the South Carolina State Department of Education. Application should be made two semesters prior to the teaching internship. The State of South Carolina will provide a status update as “cleared” or “not cleared” to the ZFSOE based on background checks and other information they receive to determine candidate suitability. If a concern arises in regards to suitability through the State, the teacher candidate must follow up directly with the South Carolina Department of Education. The Citadel application packet will be reviewed by the Director of Field Experiences and Internships as well as the Teacher Education faculty.

Once candidates are approved, they will receive notification of admission to internship through the School of Education.

To begin the internship, the student must have:

1. Acceptable disposition evaluations;
2. Completion of all professional education courses and content coursework with a cumulative GPA of at least 2.75
3. Successful completion of all previous field experiences
4. Have on file at The Citadel official records of all three appropriate PRAXIS Core test score, the appropriate

PRAXIS II subject/specialty area test score(s) and the appropriate PRAXIS II - Principles of Learning and Teaching (PLT)* test score

5. Have on file at The Citadel South Carolina State Department of Education clearance through the FBI and SLED

*Note: It is strongly recommended that students take the PLT as soon as they have completed EDUC 101, EDUC 202 and EDUC 312.

GRADUATION REQUIREMENTS

To meet graduation requirements, the Teacher Candidate must complete all requirements for their teaching field with a GPA of at least 2.750. In addition, the candidate must have passing scores on the appropriate PRAXIS Core, PRAXIS II and Principles of Learning and Teaching (PLT) exams on file at The Citadel. A grade of “B” or better in EDUC 499 is necessary to qualify for recommendation for South Carolina teacher licensure (certification).

Bachelor of Science in Tactical Strength and Conditioning

Department of Health and Human Performance
<http://www.citadel.edu/root/eveningundergraduate-studies-2-2-programs/tactical-strength-and-conditioning>

Dr. Chris Bellon, Program Director
cbellon@citadel.edu, 843-953-1652

The degree completion program in tactical strength and conditioning was created to provide students with an opportunity to receive a four-year degree from The Citadel online. The requirements for the major consist of a total of 38 credit hours from core courses, 61 credit hours from the tactical strength and conditioning major, and 21 credit hours of lower-division and upper-division electives.

Mission Statement

The mission of the Tactical Strength and Conditioning program is to foster an intellectually stimulating educational experience that prepares students to work within the tactical strength and conditioning and/or commercial fitness fields, as well as lay the foundation for graduate study. This is accomplished by developing students' knowledge, skills, and abilities essential to effectively training/coaching tactical athletes, including warfighters, crime fighters, and firefighters. This program seeks to develop each student's capabilities for applying critical thinking skills and systematic analysis to the unique physiological demands of the tactical athlete, in order to improve tactical athletes' performance, readiness, resiliency, and recovery.

Admission Requirements

1. Completion of the online evening undergraduate application.
2. Submission of all official transcripts from regionally accredited colleges or universities attended. Courses with a grade of C or higher will be considered for transfer to The Citadel. All transcripts must be received in order for the application to be complete and reviewed.
3. A one-page letter describing why you are interested in the Tactical Strength and Conditioning Program.

Program of Study

Students may begin taking Citadel courses at any time as long as 24 college credit hours have been transferred to The Citadel.

Core Requirements: 38 credit hours

Writing/English Composition (6 hours)

History (6 hours)

Humanities (6 hours)

Mathematics (6 hours)

Science (8 hours)

Courses must have lab, not necessarily sequential

Social Science (6 hours)

PSY 201 General Psychology	3
Any Anthropology, Political Science, Psychology or Sociology course	3

Major Requirements: 62 credit hours

EUGS 101-Introduction to The Citadel Experience (Must be taken in first semester at The Citadel)	1
EXSC 200 – Motor Development	3
EXSC 305 – Measurement and Evaluation	3
EXSC 412 – Essentials in Personal Training	3
EXSC 314 – Biomechanical Kinesiology	3
EXSC 315 – Techniques of Conditioning in Sport	3
EXSC 319 – Physiology of Exercise I	3
EXSC 320 – Physiology of Exercise II	3
EXSC 329 – Physiology of Exercise I Lab	1
EXSC 403 – Exercise Testing & Prescription	3
LDRS 371 – Leadership in Organizations	3
HLED 302 – Drug and Substance Abuse	3
HLED 401 – Nutrition	3
HLED 402 – Sport Nutrition	3
PHED 303 – Accommodating Persons with Disabilities within Sport and Physical Activity	3
TSAC 201 – Anatomy & Physiology for Health and Human Performance	3
TSAC 301 – Tactical Strength and Conditioning	3
TSAC 302 – Care and Prevention of Injuries for Tactical Athletes	3
TSAC 310 – Psychological Resiliency	3
TSAC 395 – Directed Field Experience in TSAC	3
TSAC 495 – Internship in TSAC	6

Approved Electives: 21 hours

Three lower division courses (101:299)
Four upper division courses (300 level and above)

Total degree program: 121 credit hours

Bachelor of Science in Civil Engineering

Department of Civil and Environmental
Engineering www.citadel.edu/CEE

Dr. William J. Davis, P.E.
Jeff.davis@citadel.edu

Mission Statement

The mission of the Department of Civil and Environmental Engineering (CEE) is to provide a nationally recognized student-centered learning environment for the development of principled leaders in the civil and environmental engineering community through a broad-based, rigorous curriculum, emphasizing theoretical and practical engineering concepts, strong professional values, and a disciplined work ethic.

The Department of Civil and Environmental Engineering recognizes the civil engineer as a people-serving professional who manages resources as well as technology. The civil engineer plans, designs, constructs, and maintains facilities essential to modern life in both the public and private sectors. Accordingly, the department strives to develop the skills of its engineering students in the management of resources—time, materials, money, and people. Consistent with the high aims of the civil engineering profession, the department seeks to ensure its academic program is underpinned by a broad base of ethical knowledge and behavior as well as modern leading-edge technology. The department accomplishes its mission by connecting students, faculty, and staff in a unique academic environment, achieving the intended development of the student through the enriched personal, professional, and educational growth of each individual.

Admission Requirements

1. Completion of the designated courses or equivalents from an approved technical college with a grade of C or higher.
2. Completion of the evening undergraduate application.
3. Submission of all official transcripts from regionally accredited colleges or universities attended. Courses with a grade of C or higher will be considered for transfer to The Citadel. All transcripts must be received in order for the application to be complete and reviewed.

Program Educational Objectives:

The Civil and Environmental Engineering program educational objectives are designated in the following three areas:

Design:

Graduating students who are successful in engineering based on a course of study focused on design, including a solid theoretical and practical foundation that leads to successful employment in the private and public sectors.

Sustainable Success:

Graduating students who have sustainable career success and participate in leadership roles through demonstration of lifelong learning, effective communication, contributions on multidisciplinary teams, and broad based prospective of engineering and societal needs.

Broad Based Education:

Graduating students who have a broad educational background that leads to good citizenship through leadership, management, decision making and problem solving abilities.

Departmental Core Values

The Department of Civil and Environmental Engineering has adopted the following core values:

Students are our Focus: We believe the education, development, empowerment, and welfare of our students are the primary focus of our efforts.

Civil Engineers as Principled Leaders: We believe the engineering profession requires the highest professional and ethical standards, which we seek to model, teach and prepare our students to embrace.

Collaborative Teaching and Learning Environment: We believe a collaborative collegial environment among our faculty, staff and students is critical in sustaining advancement in educational excellence.

Growth through Assessment: We believe data-driven inquiry and improvement will lead us to sustained advancement in educational excellence.

Program Requirements Two-Plus-Two Evening Studies

The Citadel, through The Graduate College, offers an undergraduate Bachelor of Science degree in Civil Engineering. This program is offered in cooperation with South Carolina technical schools where the student completes the first two years of study. Students may also attend a regionally accredited college or university. The junior and senior years of study are completed at The Citadel by attending evening classes.

Student Outcomes

At the time of graduation from the civil engineering program a student should have achieved an acceptable level of skills and knowledge in the following areas:

- Mathematics
- Natural Sciences
- Mechanics
- Experiments
- Problem Solving
- Design in four Areas*
- Lifelong Learning
- Professional & Ethical Responsibility
- Breadth in Civil Engineering in four areas* (*Environmental, Geotechnical, Structural, Transportation)
- Communication
- Public Policy/Public Administration
- Business
- Leadership
- Multi-Disciplinary Team Work
- Contemporary Issues

Program of Study

The Civil and Environmental Engineering Department's four-year program begins with courses that provide a foundation of knowledge and skill in the basic arts and sciences. Limited specialization in engineering starts during the sophomore year. In the junior and senior years, the time is devoted essentially to basic professional subjects. Throughout the four years, the program emphasizes the development of habits of orderly study, investigation, sound reasoning, problem-solving, and design, rather than the mere acquisition of factual information. It is stressed that an engineer is a professional, thoroughly grounded in engineering science and technology, but also aware of the social, economic, ethical, and ecological implications of professional activities. The civil engineering curriculum is accredited by ABET (www.ABET.org). Each year the curriculum is augmented by off-campus educators and engineers who lecture and moderate seminars in engineering specialties. Students' sources of knowledge are broadened by participation in these seminars and the student chapters of the American Society of Civil Engineers, Tau Beta Pi (honorary engineering society), the Society of American Military Engineers, the Society of Women Engineers (SWE), Institute of Transportation Engineers (ITE), and National Society of Black Engineers (NSBE).

Civil & Environmental Engineering Major

Courses Taken at a South Carolina Technical College (or equivalent): 70 credit hours

Civil Engineering (20 hours)

EGR-260 Engineering Statics	3
EGR-270 Introduction to Engineering	3
EGR-275 Introduction to Engineering/Computer Graphics	3
EGR-282 Introduction to Civil Engineering	3
EGR-285 Engineering Surveying I	3
EGR-286 Engineering Surveying II	3
EGR-295 Engineering Surveying Lab I	1
EGR-296 Engineering Surveying Lab II	1

Writing/English Composition (6 hours)

Humanities/Social Sciences (6 hours)

History (6 hours)

Math/Science (32 hours)

BIO Biology Science I	4
CHM College Chemistry I	4
CHM College Chemistry II	4
MAT Calculus I	4
MAT Calculus II	4
MAT Calculus III	4
MAT Differential Equations	4
PHY University Physics I	4

Courses Taken at The Citadel: 60 credit hours

Third Year (31 hours)

CIVL-203 Dynamics	3
CIVL-302 Highway Engineering	3
CIVL-304 Mechanics of Materials	3
CIVL-305 Transportation Engineering	3
CIVL-307 Materials Laboratory	1
CIVL-309 Structural Analysis	4
CIVIL-314 Engineering Economy	2
CIVL-320 Fluid Mechanics	3
CIVL-322 Introduction to Environmental Engineering	3
CIVL-327 Asphalt and Concrete Laboratory	1
CIVL-411 Engineering Management	3
CIVL-418 Fluid Mechanics Laboratory	1
CIVL-419 Environmental Engineering Laboratory	1

Fourth Year (29 hours)

CIVL-321 Hydrology and Hydraulics	3
CIVL-331 Probability and Statistics for Civil and Construction Engineering	3
CIVL-402 Geotechnical Engineering Laboratory	1
CIVL-404 Reinforced Concrete Design	3
CIVL-406 Steel Design	3
CIVL-408 Water and Wastewater Systems	3
CIVL-409 Introduction to Geotechnical Engineering	3
CIVL-410 Geotechnical Engineering II	3
CIVL-412 Engineering Practice & Professional Licensure	1
CIVL-432 Civil Engineering Design Capstone I	3
CIVL-433 Civil Engineering Design Capstone II	3

Total Credit Hours: 130

LeTellier Hall was designed for the needs of civil and environmental engineering education and contains, in addition to laboratories, six multimedia classrooms and one multimedia assembly room that contains additional audio-visual aids. There are three computer facilities located in LeTellier Hall. To help ensure the best use of these facilities, priority access goes to students using software or capabilities specific to the LeTellier sites.

Main Computer Lab – LeTellier 203

LeTellier 203 is the primary teaching and student-use computer facility in the Civil and Environmental Engineering Department. The 24 student stations, one projection-capable instructor station, and laser printer located in this lab are connected to the campus wide network, and provide direct Internet access via Ethernet. The software in the labs is Windows based. All machines in the lab have graphics-capable www browsers. The department's standard general purpose software includes: Microsoft Office, Mathcad, AutoCAD, and ArcGIS. In addition, there are a number of course specific software packages. Faculty also post classroom presentations, handouts, programming examples, class notes, and solutions to tests, and homework on CitLearn (Blackboard). These postings are in a mixture of formats including PDF files, Mathcad documents, spreadsheet files, executable programs, and multimedia presentation files that students may review as needed before and after class.

Special Applications Lab – LeTellier 206

LeTellier 206 is the home of the Civil and Environmental Engineering Department Special Applications Lab. The seventeen student computers serve primarily as AutoCAD, GIS (ArcView) and structural design workstations. Other uses involve construction management, Global Positioning System (GPS) data analysis/adjustment, and traffic engineering studies. Occasionally, small sections of courses may be scheduled in the lab utilizing the instructors-only workstation and projection system. This laboratory is equipped with a network A-B size laser printer and E-size plotter.

Graphics Lab – LeTellier 308

LeTellier 308 is the home of the Civil and Environmental Engineering Department Graphics Instruction Lab. The instructor's station is equipped with a projection system for both the computer and document camera. The twenty student computers serve primarily as AutoCAD and ArcGIS workstations. This laboratory is equipped with a networked A/B size laser printer.

Materials Testing Laboratory: Major items of equipment include a 300,000 pound concrete cylinder testing machine; two 60,000-pound hydraulic universal testing machine; and equipment for making tension, compression, shearing, and most other accepted and significant tests on metals, concrete, wood, and other structural materials.

Construction Materials Laboratory: Bituminous Materials Testing. This laboratory contains equipment for making the significant quality control and identification tests on asphalt cements. Equipment for the design, mixing, compaction by both hammer and gyratory means, and testing of asphalt concrete paving mixtures by the Marshall and superpave methods are

included.

Concrete Materials Testing: A curing room, mixing equipment, air entraining measuring apparatus, scales, and other minor equipment are provided in this laboratory. Testing is accomplished using the Materials Laboratory testing equipment.

Geotechnical Laboratories: The soils laboratory is equipped with consolidmeters, triaxial and direct shear machines, unconfined compression machines, permeameters, Atterberg limit equipment, Proctor and modified AASHTO compaction apparatus, standard sieves, soil hydrometers, C.B.R. apparatus, and other equipment needed for tests and experiments with soils.

Fluid Mechanics Laboratory: Equipment is provided for a wide variety of experiments and tests involving the flow of water over weirs or through pipes, meters, orifices, or a Parshall flume. Other major items of equipment include a head loss and flow measurement fluid circuit apparatus, a Reynolds number device, two (2) hydraulic demonstration units permitting experiments involving many phenomena of open channel flow, and a centrifugal pump equipped to measure input and output of energy. In addition, a parallel-series pumping unit is available for students to study parallel-series pumping under a variety of system conditions.

Environmental Engineering Laboratory: Equipment is provided for water analysis determination (primarily according to "Standard Methods") pH, alkalinity, turbidity, conductivity, D.O., and color. Bacteriological examinations may also be made for wastewater analysis, biochemical oxygen demand, solids content, and coliform testing. The equipment includes incubators, a muffle furnace, pH meters, dissolved oxygen probes, electrophotometric devices, a constant temperature refrigerator, spectrophotometer, a drying oven, a type I water generator, a fume hood, a microscope, and essential minor tools and equipment.

Other engineering equipment: Adequate equipment is available for the courses in engineering graphics, surveying, geospatial representation, as well as for the junior and senior courses. This equipment includes levels, level rods, tapes, total stations, data collectors, and Geographic Positioning System (GPS) receivers.

Fundamentals in Engineering Examination: Each graduating student is required to sit the Fundamentals in Engineering (FE) Examination and provide documentation to the department head.

Degree: The degree of Bachelor of Science in Civil Engineering (B.S. in C.E.) is awarded to those who successfully complete the program of studies outlined in the course offerings section of this catalog. Two humanities or social science electives are required. These are selected from a list of approved electives maintained by the Civil and Environmental Engineering Department. In completing the two humanities or social science electives, the student will take one from the core curriculum. The other shall be a departmentally approved course.

Bachelor of Science in Construction Engineering

Department of Civil and Environmental Engineering www.citadel.edu/CEE

Construction Engineering Program
<http://www.citadel.edu/root/construction-engineering>

Dr. William J. Davis, P.E.
jeff.davis@citadel.edu

Mission Statement

The mission of the Department of Civil and Environmental Engineering (CEE) and Construction Engineering (CONE) is to provide a nationally recognized student-centered learning environment for the development of principled leaders in the civil engineering and construction engineering communities through a broad-based, rigorous curriculum, emphasizing theoretical and practical engineering concepts, strong professional values, and a disciplined work ethic.

The Department of Civil and Environmental Engineering and Construction Engineering recognizes that civil engineers and construction engineers are people-serving professionals who manage resources as well as technology. Civil engineers and construction engineers plan, design, construct, and maintain facilities essential to modern life in both the public and private sectors. Accordingly, the Department strives to develop the skills of its engineering students in the management of resources—time, materials, money, and people through effective combination of the academic with military discipline. Consistent with the high aims of the civil engineering and construction engineering professions, the department seeks to ensure its academic program is underpinned by a broad base of ethical knowledge and behavior as well as modern leading-edge technology. The department accomplishes its mission by connecting students, faculty, and staff in a unique academic environment, achieving the intended development of the student through the enriched personal, professional, and educational growth of each individual.

Admission Requirements

1. Completion of the designated courses or equivalents from an approved technical college with a grade of C or higher.
2. Completion of the evening undergraduate application.
3. Submission of all official transcripts from regionally accredited colleges or universities attended. Courses with a grade of C or higher will be considered for transfer to The Citadel. All transcripts must be received in order for the application to be complete and reviewed.

Program Educational Objectives

The Construction Engineering program educational objectives are designated in the following three areas:

Design:

Graduating students who are successful in engineering based on a course of study focused on design, including a solid theoretical and practical foundation that leads to successful employment in the private and public sectors.

Sustainable Success:

Graduating students who have sustainable career success and participate in leadership roles through demonstration of lifelong learning, effective communication, contributions on multidisciplinary teams, and broad based prospective of engineering and societal needs.

Broad Based Education:

Graduating students who have a broad educational background that leads to good citizenship through leadership, management, decision making and problem solving abilities.

Departmental Core Values

The Department of Civil and Environmental Engineering and Construction Engineering has adopted the following core values:

Students are our Focus: We believe the education, development, empowerment, and welfare of our students are the primary focus of our efforts.

Construction Engineers as Principled Leaders: We believe the engineering profession requires the highest professional and ethical standards, which we seek to model, teach and prepare our students to embrace.

Collaborative Teaching and Learning Environment: We believe a collaborative collegial environment among our faculty, staff and students is critical in sustaining advancement in educational excellence.

Growth through Assessment: We believe data-driven inquiry and improvement will lead us to sustained advancement in educational excellence.

Program Requirements Two-Plus-Two Evening Studies

The Citadel, through The Graduate College, offers an undergraduate Bachelor of Science degree in Construction Engineering. This program is offered in cooperation with South Carolina technical schools where the student completes the first two years of study. Students may also attend a regionally accredited college or university. The junior and senior years of study are completed at The Citadel by attending evening classes.

Construction Engineering Student Outcomes

At the time of graduation from the construction engineering program, a student should have achieved an acceptable level of skills and knowledge in the following areas:

1. Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
2. Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
3. Communicate effectively with a range of audiences.
4. Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
5. Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
6. Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
7. Acquire and apply new knowledge as needed, using appropriate learning strategies.

Construction Engineering Program of Study

The construction engineering curriculum provides a broad-based education, a strong background in mathematics and basic sciences, and a rigorous sequence of civil and construction engineering courses needed to provide the breadth and depth necessary for sustainable professional success within an ever-changing technological society. An emphasis is placed on engineering and constructability knowledge and skills that develop student's practical problem-solving abilities for application to real-world projects. Towards accomplishing this educational goal, the curriculum provides a two-semester senior design course in which students undertake significant real-world focused construction engineering projects. Additionally, our faculty promote and support the value of practical experience, and as a result, students are highly encouraged and supported in identifying opportunities and obtaining gainful employment in the construction engineering profession, or a related field, for at least one summer, preferably between the junior and senior years.

Construction Engineering Major

Courses Taken at a South Carolina Technical College (or equivalent): 68 credit hours

Civil Engineering (20 hours)

EGR-260 Engineering Statics	3
EGR-270 Introduction to Engineering	3
EGR-275 Introduction to Engineering/Computer Graphics	3
EGR-282 Introduction to Civil Engineering	3
EGR-285 Engineering Surveying I	3
EGR-286 Engineering Surveying II	3
EGR-295 Engineering Surveying Lab I	1
EGR-296 Engineering Surveying Lab II	1

Writing/English Composition (6 hours)

Humanities/Social Sciences (6 hours)

History (6 hours)

Math/Science (27 hours)

BIO Biology Science I	4
CHM College Chemistry I	4
CHM College Chemistry II	4
MAT Calculus I	4
MAT Calculus II	4
PHY University Physics I	4
Math or Science elective: AST 101, PHY 222, MAT 240, MAT 242, or as approved by Dept. Head	3

Economics/Business (3 hours)

ACC-101 Accounting Principles I	3
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Courses Taken at The Citadel: 60 credit hours

Third Year (31 hours)

CIVL-304 Mechanics of Materials	3
CIVL-314 Engineering Economy	2
CIVL-331 Probability and Statistics for Civil and Construction Engineering	3
CONE-302 Engineering/Commercial Law, Ethics, Safety and Contracts	4
CONE-311 Resource Estimating	3
CONE-320 Engineering Materials and Methods (with Laboratory)	3
CONE-340 Structural Analysis and Design	4
CONE-350 Commercial Construction and Engineering Equipment	3
CONE-360 Soils and Foundations (with Laboratory)	3
CONE-415 Project Management and Engineering Administration	3

Fourth Year (29 hours)

CIVL-412 Engineering Practice Professional Licensure	1
CONE-312 Advanced Estimating	3
CONE-330 Quality Management and Labor Relations	3
CONE-410 Project Scheduling	3
CONE-412 Engineering Practice and Professional Licensure for Construction Engineers	1
CONE-440 Construction Methods and Temporary Structural Design	3
CONE-450 Facilities Operation and Maintenance (Building Information Management)	3
CONE-460 Mechanical/Electrical Systems	3
CONE 470 Production Processes and Rapid Development (with Laboratory)	3
CONE-481 Construction Engineering Design Capstone I	3
CONE-482 Construction Engineering Design Capstone II	3

Total Credit Hours: 128

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Special Applications Lab – LeTellier 206

LeTellier 206 is the home of the Civil and Environmental Engineering Department Special Applications Lab. The seventeen student computers serve primarily as AutoCAD, GIS (ArcView) and structural design workstations. Other uses involve construction management, Global Positioning System (GPS) data analysis/adjustment, and traffic engineering studies. Occasionally, small sections of courses may be scheduled in the lab utilizing the instructors-only workstation and projection system. This laboratory is equipped with a network A-B size laser printer and E-size plotter.

Graphics Lab – LeTellier 308

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Construction Materials Laboratory: Bituminous Materials Testing. This laboratory contains equipment for making the significant quality control and identification tests on asphalt cements. Equipment for the design, mixing, compaction by both hammer and gyratory means, and testing of asphalt concrete paving mixtures by the Marshall and superpave methods are

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Concrete Materials Testing: A curing room, mixing equipment, air entraining measuring apparatus, scales, and other minor equipment are provided in this laboratory. Testing is accomplished using the Materials Laboratory testing equipment.

Geotechnical Laboratories: The soils laboratory is equipped with consolidmeters, triaxial and direct shear machines, unconfined compression machines, permeameters, Atterberg limit equipment, Proctor and modified AASHTO compaction apparatus, standard sieves, soil hydrometers, C.B.R. apparatus, and other equipment needed for tests and experiments with soils.

Fluid Mechanics Laboratory: Equipment is provided for a wide variety of experiments and tests involving the flow of water over weirs or through pipes, meters, orifices, or a Parshall flume. Other major items of equipment include a head loss and flow measurement fluid circuit apparatus, a Reynolds number device, two (2) hydraulic demonstration units permitting experiments involving many phenomena of open channel flow, and a centrifugal pump equipped to measure input and output of energy. In addition, a parallel-series pumping unit is available for students to study parallel-series pumping under a variety of system conditions.

Environmental Engineering Laboratory: Equipment is provided for water analysis determination (primarily according to "Standard Methods") pH, alkalinity, turbidity, conductivity, D.O., and color. Bacteriological examinations may also be made for wastewater analysis, biochemical oxygen demand, solids content, and coliform testing. The equipment includes incubators, a muffle furnace, pH meters, dissolved oxygen probes, electrophotometric devices, a constant temperature refrigerator, spectrophotometer, a drying oven, a type I water generator, a fume hood, a microscope, and essential minor tools and equipment.

Other engineering equipment: Adequate equipment is available for the courses in engineering graphics, surveying, geospatial representation, as well as for the junior and senior courses. This equipment includes levels, level rods, tapes, total stations, data collectors, and Geographic Positioning System (GPS) receivers.

Fundamentals in Engineering Examination: Each graduating student is required to sit the Fundamentals in Engineering (FE) Examination and provide documentation to the department head.

Degree: The degree of Bachelor of Science in Civil Engineering (B.S. in C.E.) is awarded to those who successfully complete the program of studies outlined in the course offerings section of this catalog. Two humanities or social science electives are required. These are selected from a list of approved electives maintained by the Civil and Environmental Engineering Department. In completing the two humanities or social science electives, the student will take one from the core curriculum. The other shall be a departmentally approved course.

Bachelor of Science in Electrical Engineering

Department of Electrical and Computer Engineering

www.citadel.edu/root/eveningundergraduatestudies-2-2-programs/electrical-engineering

Dr. Robert Barsanti, 843-953-7593
robert.barsanti@citadel.edu

General Information

In 1941 the Board of Visitors authorized the establishment of a Department of Electrical Engineering at The Citadel. Because World War II intervened, the first electrical engineering degrees were awarded to the class of 1948. The electrical engineering program is offered in two modes—day mode and the two-plus-two evening mode. The day mode is open only to members of the South Carolina Corps of Cadets, veterans, and enlisted active duty students assigned to one of The Citadel's ROTC Departments. The two-plus-two evening mode is open to transfer students and does not require ROTC or Health and Physical Education. Otherwise curricula, faculty, textbooks, laboratory equipment, course content, classrooms, and laboratories are the same for both modes.

The Electrical and Computer Engineering Department is located in Grimsley Hall, a first-tier engineering education facility that provides a great learning environment. Modern, fully equipped laboratories, classrooms, and faculty offices are logically arranged on the third floor. The related Departments of Cyber and Computer Sciences, Physics, and Civil and Environmental Engineering are housed adjacent to the department, creating a "micro-campus" of science and technology.

The electrical engineering program is accredited by the Engineering Accreditation Commission (EAC) of the Accreditation Board for Engineering and Technology (ABET), <http://www.abet.org>.

Mission

The mission of the Department of Electrical and Computer Engineering is: To prepare the individual for professional work or for graduate study in the fields of electrical and computer engineering and to provide as many of the elements of a broad education as can be included in a program of professional study leading to the degree of Bachelor of Science in Electrical Engineering.

In addressing its mission, the department strives, through small classes, and hands-on experience in laboratories closely monitored by full-time faculty, to provide an environment

highly conducive both to learning and to the development of close student-faculty relationships.

The electrical engineering curriculum places emphasis on a broad liberal education base, a strong background in mathematics and basic sciences, and a logical sequence of electrical and computer engineering courses that provide the breadth and depth necessary for continuous professional growth in today's technological society. By the end of the junior year, the electrical engineering student normally selects an area of professional emphasis such as computer engineering, control systems, communication systems, electronics, or power systems. Integral to the program is the design component that develops the student's ability to address practical engineering problems. Engineering design problems and concepts are included throughout the curriculum and the experience is capped by a mandatory two-semester senior design course in which the students undertake significant design projects.

Convinced of the great value of practical experience, the department encourages its majors to obtain gainful employment in electrical engineering or a related field for at least one summer, preferably between the junior and senior years.

Admission Requirements

1. Completion of the designated courses with an approved Technical College or equivalent with a grade of C or higher.
2. Completion of the evening undergraduate application.
3. Submission of all official transcripts from regionally accredited colleges or universities attended. Courses with a grade of C or higher will be considered for transfer to The Citadel. All transcripts must be received for the application to be complete and reviewed.

Program Requirements Two-Plus-Two Evening Mode

The Citadel through The Citadel Graduate College offers an undergraduate Bachelor of Science degree in Electrical Engineering (BSEE). This program is offered in cooperation with South Carolina technical colleges where the student completes the first two years of study. Students may also attend a regionally accredited college or university. The junior and senior years of study are completed at The Citadel by attending evening classes. The program is designed and offered to enable the full-time student to complete the upper two years of the program and receive a BSEE within two academic years and two summers. Students are required to be advised for each semester of enrollment at The Citadel.

Program Educational Objectives

The Citadel Department of Electrical and Computer Engineering program prepares graduates to:

1. Succeed in the practice of electrical engineering, by ethically and judiciously applying knowledge of science,

mathematics and engineering methods to solve problems facing a technologically complex society.

2. Apply and operate current hardware and software tools, equipment and development environments to conduct and/or lead engineering analysis, design and research.
3. Value and pursue lifelong learning, not only to keep current in electrical and computer engineering fields, but also to sustain awareness of engineering-related issues facing contemporary society.
4. Pursue graduate education and/or professional registration as desired or required.
5. Be principled leaders with strong communications and team building skills.

Student Outcomes

The Citadel's Electrical Engineering program includes assessment to demonstrate that students obtain:

1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
3. An ability to communicate effectively with a range of audiences.
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgements, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgement to draw conclusions.
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Electrical Engineering Program

The initial year of study includes engineering fundamental courses designed to develop the basic skills and good teaming habits through case studies requiring the communication of creative ideas. The second semester freshman curriculum includes three credit hours of computer applications for electrical engineers. Electrical engineering topics studied in the sophomore year include six credit hours of electrical circuit analysis, and 1 credit hour of electrical circuits laboratory. Theory is combined with application, demonstration, and experimental verification. In addition, the first two years include 19 credit hours of mathematics, eight credit hours of chemistry or biology, 8 credit hours of physics, 18 credit hours of English and history and three credit hours of social science to provide the foundation necessary for an engineering education. Specific course requirements, using Trident

Technical College course numbers, are outlined later under Required Program for 2+2.

The junior year requires a total 17 credit hours of electrical engineering course work. Breadth of coverage is provided by courses in signals and systems analysis, electronics, systems (automatic controls), digital systems, electromagnetics, and electromechanical energy conversion. Many of these courses include engineering design problems drawn from the experience of the faculty. First semester juniors complete their fifth mathematics course, MATH-335 (Applied Mathematics

II), providing coverage of mathematical topics required in upper division electrical engineering courses. The junior year includes a single elective course that must be technical in nature but outside the mainstream of electrical engineering.

The senior year provides depth in electrical and computer engineering by requiring five out of a specified set of 400-level electrical engineering elective courses and at least one approved Computer Science elective. The elective courses are ELEC-401 (Electronics II), ELEC-403, (Electric Power Systems), ELEC- 405 (Electrical Measurements), ELEC-407 (Systems II), ELEC-413 (Advanced Topics in Electrical Engineering) ELEC-414 (System Simulation), ELEC-416 (Communications Engineering), ELEC-418 (Advanced Digital Systems), ELEC-419 (Computer Network Architecture), ELEC-423 (Digital Signal Processing), ELEC- 424 (Solid-State Devices), ELEC-425 (Interference Control in Electronics), ELEC-426 (Antennas and Propagation), ELEC-427 (Energy Systems Engineering), ELEC-428 (Computer Architecture), ELEC-430 (Independent Research in Electrical Engineering), ELEC-450 (Electrical Engineering Internships), and CSCI-420 (Software Engineering). These electives provide the student the opportunity to pursue an area of interest.

While narrow specialization is neither possible nor desirable at the undergraduate level, these three-credit electives provide depth in both design and theory in their specialized areas. Below are several examples of possible areas of concentration available to the student.

Computer Engineering

CSCI-223 Data Structures (prereqs: MAT-206, CSCI 201/201)
CSCI-420 Software Engineering
ELEC-405 Electrical Measurements
ELEC-418 Advanced Digital Systems
ELEC-419 Computer Network Architecture
ELEC-423 Digital Signal Processing
ELEC-428 Computer Architecture

Power Engineering

CIVL-310 Statics and Mechanics of Materials for Non-Civil Engineers
ELEC-307 Nuclear Engineering
ELEC-403 Electric Power Systems
ELEC-407 Systems II
ELEC-405 Electrical Measurements
ELEC-426 Antennas and Propagation
ELEC-427 Energy Systems Engineering

Communications

- PHYS-308 Optics
- ELEC-401 Electronics II
- ELEC-416 Communication Engineering
- ELEC-419 Computer Network Architecture
- ELEC-423 Digital Signal Processing
- ELEC-426 Antennas and Propagation

Electronics

- PHYS-410 Thermodynamics
- ELEC-401 Electronics II
- ELEC-405 Electrical Measurements
- ELEC-418 Advance Digital Systems
- ELEC-423 Digital Signal Processing
- ELEC-424 Solid State Devices
- ELEC-405 Electrical Measurements

Electrical Engineering Design Experiences

Engineering design is distributed throughout the electrical engineering curriculum. Introduction to the design process and the initial design experience occur in the freshman courses. The engineering profession and the ethical responsibilities of professional engineers are discussed. Design problems are posed that require little or no in-depth engineering knowledge. For example, a first design problem might ask the student to design a dormitory room workplace. Functionality, aesthetics, and cost of implementation are a few of the issues to be considered. Case studies are assigned that provide an opportunity for the students to work in teams. The emphasis is on the synthesis of a product that meets broad requirements. The students are introduced to the concept of design in which there is no single right answer and where there are relatively few limits placed on the creative process. Techniques of analysis, synthesis, iteration, and approximations are studied in the sophomore and junior electrical engineering courses. Specialized design exercises are used to illustrate the use of these techniques in the areas of circuits, systems, electronics, electromagnetic, and digital systems. The senior year provides the opportunity for the student to begin to focus on design techniques in a particular area of interest through the choice of at least five senior electrical engineering elective courses. Examples range from the use of a load flow program to determine operational conditions of a small power system in a contingency situation (ELEC-403), to the design of a state estimator (ELEC-407), to the design and implementation of digital filters (ELEC-423).

The design experience culminates in the required senior design courses, ELEC-421 and ELEC-422. This two-semester design sequence provides students the opportunity to work on a project of interest and provides the faculty the opportunity to guide students in their first major design experiences and emphasize once more the various constraints that may come into play in a design. The students are taught several different structured design approaches. Project definition and documentation are stressed. Design teams of three to four students are formed at

the beginning of the first semester. Students are instructed on various practical aspects of design, such as layout considerations, safety, functionality, and documentation of design.

The student design teams select and propose a major design project to be completed by the end of second semester. They must enlist a faculty project advisor to guide their project. At the end of the first semester the design teams present their design proposals (written and oral) that include their preliminary design (block diagram level), a schedule for the following semester, and a cost estimate. In the second semester, the teams do the detailed design, and build, test, refine, demonstrate, and document their design projects. In addition to the technical aspects, project management and presentation techniques are taught and applied. A detailed project specification is developed and placed under tight change control. Financial and scheduling aspects of the project are tracked. A final presentation in both written and oral form is required at the end of the semester, along with a working demonstration.

Electrical Engineering Major

Courses taken at a South Carolina Technical College
(or equivalent): 68 credit hours

Electrical Engineering Courses (18 credit hours)

ECE-201 Electrical and Computer Engineering Seminar	1
ECE-205 Electrical and Computer Lab I	3
ECE-221 Introduction to Electrical Engineering I	3
ECE-222 Introduction to Electrical Engineering II	3
EGR-270 Introduction to Engineering	3
EGR-273 Problem Solving for Engineers	2
EGR-275 Introduction to Engineering/ Computer Graphics	3

Writing/English Composition (6 hours)

Humanities/Social Sciences (6 hours)

History (6 hours)

Math/Science (32 credit hours)

BIO Biology I or CHM College Chemistry I	4
BIO Biology II or CHM College Chemistry II	4
MAT Calculus I	4
MAT Calculus II	4
MAT Calculus III	4
MAT Differential Equations	4
PHY Physics I	4
PHY Physics II	4

Courses Taken at The Citadel: 58 credit hours

Electrical Engineering Courses (32 credit hours)

ELEC-302 Electrical Machinery Laboratory	1
ELEC-306 Electronics I	3
ELEC-309 Signals and Systems I	3
ELEC-311 Digital Logic and Circuits	3
ELEC-312 Systems I	3
ELEC-313 Electronics Laboratory	1
ELEC-316 Electromechanical Energy Conversion	3
ELEC-318 Electromagnetic Fields	3
ELEC-330 Digital Systems Engineering	3
ELEC-412 Applied Probability and Statistics for Engineers	3
ELEC-421 Design I	3
ELEC-422 Design I	3

Electrical Engineering Electives (15 credit hours)

Choose five courses from the following list:

ELEC-307 Nuclear Engineering	3
ELEC-401 Electronics II	3
ELEC-403 Electric Power Systems	3
ELEC-405 Electrical Measurements	3
ELEC-407 Systems II	3
ELEC-413 Advanced Topics in Electrical Engineering	3
ELEC-414 System Simulation	3
ELEC-416 Communications Engineering	3
ELEC-418 Advanced Digital Systems	3
ELEC-419 Computer Network Architecture	3
ELEC-423 Digital Signal Processing	3
ELEC-424 Solid-State Devices	3

ELEC-425 Interference Control in Electronics	3
ELEC-426 Antennas and Propagation	3
ELEC-427 Energy Systems Engineering	3
ELEC-428 Computer Architecture	3
ELEC-430 Ind. Research in Electrical Engineering	3
ELEC-450 Electrical Engineering Internship	3
CSCI-420 Software Engineering	3

Technical Elective (3 credit hours)

Choose one course from the following list:

PHYS-308 Optics	3
PHYS-410 Thermodynamics	3
CIVL-202 Statics	3
CIVL-310 Statics and Mechanics of Materials for Non-Civil Engineers	3
CSCI-223 Data Structures	3
MATH-381 Deterministic Methods of Operational Research	3
MATH-470 Mathematical Models and Applications	3
MECH-325 Computer Applications w/ Lab	3

Math/Civil Engineering Courses (5 credit hours)

MATH-335 Applied Mathematics II	3
CIVL-314 Engineering Administration	2

Humanities Elective (3 credit hours)

To be selected from an approved list of courses in the
humanities or social sciences**

**Advanced humanities or social science courses

Note: Advanced Topics in Electrical Engineering (ELEC-413)
is offered only occasionally. The Engineering science and
engineering design credits are a function of the topics studied.

Credit hours required for graduation: 126

Bachelor of Science in Mechanical Engineering

Department of Mechanical Engineering

www.citadel.edu/root/eveningundergraduatestudies-2-2-programs/mechanical-engineering

Dr. Robert Rabb, Department Head,
843-953-0520, rrabb@citadel.edu

Mission Statement

To broadly educate and prepare graduates to become principled mechanical engineering leaders in the global community by instilling the core values of The Citadel, the School of Engineering and the Mechanical Engineering program in a challenging intellectual environment that includes a broad-based, rigorous curriculum, emphasizing theoretical and practical engineering concepts, strong professional values, and a disciplined work ethic.

Admission Requirements

1. Completion of the designated courses or equivalents from an approved technical college with a grade of C or higher.
2. Completion of the evening undergraduate application.
3. Submission of all official transcripts from regionally accredited colleges or universities attended. Courses with a grade of C or higher will be considered for transfer to The Citadel. All transcripts must be received in order for the application to be complete and reviewed.

Program Educational Objectives

The Mechanical Engineering Program educational objectives prepare graduates to attain:

- Success in the practice of mechanical engineering, by ethically and judiciously applying knowledge of science, mathematics and engineering methods, to solve problems facing a technologically complex society.
- Positions to apply and operate current engineering and analysis tools and equipment to conduct and/or lead engineering analysis, design and research.
- Self-development to value and pursue lifelong learning, not only to keep current in the mechanical engineering field, but also to sustain awareness of engineering-related issues facing contemporary society through formal and informal opportunities.
- Graduate education and/or professional registration as desired or required.
- Roles as principled leaders with strong communications and team-building skills to lead people, manage resources, solve complex problems, communicate information, and influence decisions.

Program Core Values

The Mechanical Engineering Program has adopted the following core values:

Students are our Focus: We believe the education, development, empowerment, and welfare of our students are the primary focus of our efforts.

Engineers as Principled Leaders: We believe the engineering profession requires the highest professional and ethical standards, which we seek to model, teach and prepare our students to embrace.

Collaborative Teaching and Learning Environment: We believe in a collaborative collegial environment among our faculty, staff and students is critical in sustaining advancement in educational excellence.

Growth through Assessment: We believe data-driven inquiry and improvement will lead us to sustained advancement in educational excellence.

Program Requirements Two-Plus-Two Evening Studies

The Citadel through The Citadel Graduate College offers an undergraduate Bachelor of Science degree in Mechanical Engineering (BSME). This program is offered in cooperation with South Carolina technical colleges where the student completes the first two years of study. Students may also attend a regionally accredited college or university. The junior and senior years of study are completed at The Citadel by attending evening classes.

Student Outcomes

The Citadel's Mechanical Engineering program includes assessment to demonstrate that students obtain:

11. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
22. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
33. An ability to communicate effectively with a range of audiences.
44. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgements, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
55. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
66. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgement to draw conclusions.
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Program of Study

The Mechanical Engineering program will incorporate a number of courses within the existing ABET accredited civil and electrical engineering programs. As shown in the program of study, there will be five main focus areas to meet the needs of the local industry in South Carolina.

- 1. Manufacturing Engineering:**
Students acquire knowledge in different manufacturing practices to optimize the processes and systems in a production environment.
- 2. Composites** - Students study composite materials, the principles behind their design, their physical properties, fabrication methods, and application to real-world engineering solutions.
- 3. Power and Energy** - Students learn about energy resources, alternative energy, energy storage, conversion between forms of energy, and energy performance limitations as they apply to satisfying the needs of mankind.
- 4. Aeronautical Systems** - Students study the science and design of fixed wing light systems, aircraft performance and structures.
- 5. Mechatronics** - Students apply skills from mechanical engineering and electrical engineering to enable real-world control of robots, unmanned aerial vehicles, and other autonomous systems.

Mechanical Engineering Major

Courses taken at a South Carolina Technical College (or equivalent): 72 credit hours

Mechanical Engineering (22 hours)

ECE-202 Intro. to Engineering	3
ECE-205 Electrical and Computer Engineering Lab	3
ECE-221 Intro. to Electrical Engineering I	3
ECE-222 Intro. to Electrical Engineering II	3
EGR-260 Engineering Statics	3
EGR-269 Electrical and Computer Engineering Seminar	2
EGR-273 Problem Solving for Engineers	2
EGR-262 Engineering Dynamics [^]	3

Writing/English Composition (6 hours)

Humanities/Social Sciences (6 hours)

History (6 hours)

Math/Science Requirements (32 hours)

BIO Biology	4
CHM College Chemistry	4
MAT Calculus I	4
MAT Calculus II	4

MAT Calculus III	4
MAT Differential Equations	4
PHY Physics I	4
PHY Physics II	4

Courses Taken at The Citadel: 67 credit hours

Third Year (40 hours)

CIVL-203 Dynamics [^]	3
CIVL-304 Mechanics of Materials	3
CIVL-307 Materials Laboratory	1
MECH-304 Engineering Materials w/lab	3
MECH-310 Thermo-Fluid Systems I w/lab	3
MECH-311 Thermo-Fluid Systems II w/lab	3
MECH-325 Computer Applications w/lab	3
MECH-330 Measurements & Instr. w/lab	3
MECH-340 Manufacturing Processes w/lab	3
MECH-345 Machine Design	3
MECH-350 Modeling/Analysis & Dyn. Sys I	3
MECH-351 Modeling/Analysis & Dyn. Sys II w/lab	3
MECH-365 Computational Methods in Engineering	3
MECH-460 Mechanical Engineering Sys Design	3

Fourth Year (27 hours)

MECH-415 Heat Transfer	3
MECH-450 Mechatronics w/lab	3
MECH-481 Senior Design I	3
MECH-482 Senior Design II	3
MECH ME Option I **	3
MECH ME Option II **	3
MECH Mechanical Elective **	3
Technical Elective *	3
Adv. Humanities/Social Science Course ***	3

[^] Students can elect to take this course at TTC or in the summer at The Citadel.

* To be selected from an approved list of courses in engineering or science.

** To be selected from an approved list of courses in Mechanical Engineering.

*** To be selected from an approved list of courses in humanities or social sciences.

Total Credit Hours: 139

All scheduled freshman and sophomore level engineering, science, and mathematics courses must be completed before a student will be permitted to enroll in senior level courses. Students are required to be advised for each semester of enrollment at The Citadel.

The Main Computer Lab – LeTellier 203

LeTellier 203 is the primary teaching and student-use computer facility in the Mechanical Engineering Program. The twenty-four student stations and one projection-capable instructor station and laser printer located in this lab are connected to the campus-wide network, CITnet, and provide direct Internet access via Ethernet. The software in the labs is Windows based. All machines in the lab have graphics-capable WWW browsers. The program's standard general purpose software includes: Microsoft Office, Matlab, and SolidWorks.

Controls and Mechatronics Lab – Grimsley 330

Grimsley 330 is the primary teaching and student use facility in the Mechatronics focus area of the Mechanical Engineering Program. The room contains twenty-four student workstations or twelve team stations and one instructor station. The software in the room is Windows based. Laboratory equipment consists of standard function generators, oscilloscopes, multimeters, and Feedback instruments for laboratory use and applications.

Materials Testing Laboratory – LeTellier 101

Major items of equipment include a 250,000 pound and another 300,000 pound concrete cylinder testing machine; two each 60,000-pound hydraulic universal testing machines; light microscope; impact tester; hardness tester; grinder/polisher; dual chamber furnace; and equipment for making tension, compression, shearing, and most other accepted and significant tests on metals, ceramics, polymers, and composites.

Fluid Mechanics Laboratory – LeTellier 104

Equipment is provided for a wide variety of experiments and tests involving the flow of water through pipe networks, meters, and orifices. Other major items of equipment include a head loss and flow measurement fluid circuit apparatus, a Reynolds number device, two (2) hydraulic demonstration units permitting experiments involving many phenomena of open channel flow.

Fabrication Shop

The Fabrication Shop is a 1,250 square foot facility with a 4 axis CNC machine, mill, welding equipment and other metal working tools. Additionally, there are various woodworking power tools for student projects and design work.

Project Shop

The Project Shop is a 750 square foot facility with workspace and storage space for assembly of student projects.

Other engineering equipment: Adequate equipment is available for the courses in thermo-fluids, machine design, manufacturing, as well as for the other junior and senior courses.

Fundamentals of Engineering Examination: Each graduating student is required to take the Fundamentals of Engineering (FE) Examination and provide documentation to the program director.

Degree: The degree of Bachelor of Science in Mechanical Engineering (B.S. M.E.) is awarded to those who successfully complete the program of studies outlined in the courses offerings section of this catalog.

Two humanities or social science electives, one mechanical elective, one technical elective, and two Mechanical Engineering Options are required. These are selected from a list of approved electives maintained by the Mechanical Engineering Program. In completing the two humanities or social science electives, the student will take one from the core curriculum. The other will be a program approved course. The Mechanical Engineering Options allow the students to specialize in a technical area of mechanical engineering by completing a focus area at the senior level that integrates principles and practices of earlier courses into the application of the engineering system. Students who are on academic probation will not be permitted to enroll in upper level courses offered by the Mechanical Engineering program (i.e. junior and senior level classes).

GRADUATE COURSE DESCRIPTIONS

Course Descriptions

Descriptions of graduate courses are listed in this section. Consult the course schedules online to determine the course offerings in a particular term.

Anthropology (ANTH)

ANTH-501—Physical and Cultural Adaptations

Three Credit Hours

This course examines how humans have adapted to their unique environments through cultural alterations and physical changes to the body by looking at pre-1492 Native American peoples. The development of human cultures are examined beginning with the origins of the First Americans and tracing their migrations to the various environments of North, Central, and South America for a more in-depth look at the range of variability among living peoples. The growth and development of human cultures are examined from the movement of pre-1492 Native Americans as bands and progressing through tribes to more advanced urban societies.

ANTH-508—Special Topics in Anthropology

Selected topics that fit the needs of students as well as the specialized knowledge of the faculty. Topics could range from the main subfields of biological, cultural, or linguistic anthropology.

Biology (BIOL)

BIOL-502—Comparative Vertebrate Anatomy

Four Credit Hours

A study of the comparative anatomy of vertebrate animals. Emphasis will be placed on the evolution of organ systems in response to environmental pressures.

Lecture: three hours a week; laboratory: three hours a week.

BIOL-505—Biometry

Three Credit Hours

This course will focus on methods and procedures for designing experiments, gathering, analyzing, and interpreting data. Topics to be included are descriptive statistics, estimation, measurements of confidence and reliability, tests of significance, measurements of relationship and correlation, and non-parametric analyses. In addition to lecture format, students will get hands-on experience in data gathering, analyses using computer statistical programs, statistical inference and decision making.

BIOL-506—Ecology

Four Credit Hours

An introduction to the study of biological interrelationships and the effects of the environment on the structure and function of animal and plant systems. Laboratory will emphasize methods and materials of ecological investigations.

Lecture: two hours a week; laboratory: four hours a week.

BIOL-508—Genetics

Four Credit Hours

A study of inheritance, including Mendelian genetics, molecular genetics, changes in chromosome structure and number, cytogenetics, and population genetics.

Lecture: three hours a week; laboratory: three hours a week.

BIOL-509—Marine Biology

Four Credit Hours

Lectures cover major ecological factors and the fundamentals of oceanography. Laboratory work stresses familiarity with species, taxonomic methods, sampling procedures, experimental design, use of equipment, and data handling.

Lecture: two hours a week; laboratory: four hours a week.

BIOL-510—Vertebrate Natural History

Four Credit Hours

An introduction to the classification, ecology, evolution, and distribution of the vertebrates. Laboratory with emphasis on identification and field study techniques, especially with respect to the vertebrates of South Carolina.

Lecture: three hours a week; laboratory: three hours a week.

BIOL-512—Descriptive Histology

Four Credit Hours

A detailed study of the chief types of animal tissues and a description of the histology of organs. Laboratory work includes microscopic study of cells, tissues, and organs of animals.

Lecture: three hours a week; laboratory: three hours a week.

BIOL-514—The Vascular Flora of South Carolina

Four Credit Hours

An introductory study of the native vascular flora of South Carolina, emphasizing the identification and collection of native plants. The student will have practice in use of taxonomic keys and in preparation of specimens.

Lecture: two hours a week; laboratory: four hours a week.

BIOL-518—Ornithology

Four Credit Hours

A study of the structure, function, and ecology of birds. Field trips and bird specimens will give students a working knowledge of birds common to South Carolina.

Lecture: three hours a week; laboratory: three hours a week.

BIOL-519—Economic Botany

Three Credit Hours

A course in economic botany devoted to the consideration of plants which are useful or harmful to humans, their origins and history, botanical relationships, chemical constituents that make them economically important, and their role in prehistoric and modern cultures and civilizations. Lecture: three hours a week.

BIOL-526—Freshwater Biology

Four Credit Hours

The study of freshwater organisms and their environment. Instruction will cover the biological diversity, ecological and physiological adaptation, and the physical setting of freshwater systems. Local systems of interest include large coastal rivers and lakes, upper portions of estuaries, and old rice fields.

Lecture: two hours a week; laboratory: four hours a week.

BIOL-532—Developmental Biology

Four Credit Hours

A study of animal embryology and its molecular control, including: processes of fertilization; the processes of cleavage, gastrulation, and neurulation; the formation of tissues and organs from the three primordial germ layers; the role of secondary induction and of hormones in development; the role of the environment in development; and some of the techniques of molecular biology that are used in the study of developmental processes. The laboratory will include use of model systems to investigate the principles discussed in lecture.

Lecture: three hours a week; laboratory: three hours a week.

BIOL-540—Biotechnology for STEM Educators

Three Credit Hours

This course covers current techniques in biotechnology research and applications and highlights the interdisciplinary nature of the topic. Discussions cover techniques used in genomics, and proteomics and the applications of these techniques. Current techniques are explained and ethical considerations are discussed. Emerging technologies in this field and their applications are introduced.

BIOL-601—Evolution

Three Credit Hours

A review of evolutionary principles and general morphology of the animal kingdom.

Lecture: three hours a week.

BIOL-602—Morphological Survey of the Plant Kingdom

Three Credit Hours

An advanced course in comparative morphology, life history, and phylogeny of the vascular and nonvascular plants. The laboratory will include work on structural and developmental relationships as applied to morphological and anatomical interpretations of the vascular and nonvascular plants.

Lecture: two hours a week; laboratory: two hours a week.

BIOL-603—General Physiology

Three Credit Hours

A study of the general principles of animal physiology. Emphasis will be placed on cellular, tissue, and organ system function and how these are integrated to allow the organism to respond and succeed in its environment.

Lecture: three hours a week.

BIOL-604—Marine Invertebrates

Four Credit Hours

A study of marine invertebrates and their environment. Lecture: three hours a week; laboratory: three hours a week.

BIOL-605—Laboratory Methods in Biology

Four Credit Hours

An experience in laboratory preparation, participation, evaluation, and supply sources for a series of general biology laboratory exercises for the secondary or middle school level.

Lecture: three hours a week; laboratory: three hours a week.

BIOL-606—Field Methods in Biology

Four Credit Hours

An examination of the methods used by field biologists emphasizing experimental design, sampling techniques, and data analysis. Classroom discussion will be supplemented by practical field experiences. Topics will include the measurement of primary productivity, estimation of animal population size, plant community composition and diversity, and the correlation of environmental factors with species distribution. An effort will be made to use procedures and field situations that are accessible to local teachers.

Lecture: three hours a week; laboratory: four hours a week.

BIOL-607—Microbiology

Four Credit Hours

An advanced study of the fundamental life processes of microorganisms and their importance to humans. The emphasis of the course will be on bacteriology. Includes a brief introduction to epidemiology and immunology.

Lecture: three hours a week; laboratory: three hours a week.

BIOL-609—Seminar in Environmental Studies

Three Credit Hours

A series of field trips, lectures, and other experiences designed to develop an understanding of the environment as it affects human well-being now and in the future. This course is especially designed for teachers and counselors, grades K-12, in all disciplines. Classes will normally meet daily from 8:30 a.m. to 2:00 p.m. for a period of two weeks during a summer session. Outside fieldwork is required.

BIOL-610—Special Topics in Biology

Variable Credit Hours

This course is designed for the study of specialized topics in modern biology. The subject for each course will be announced. Lecture and laboratory hours per week dependent on topic.

BIOL-611—Graduate Research

Variable Credit Hours

Research problems in various areas of biology to introduce the student to the planning and execution of research experimentation, data analysis, and the presentation of research findings.

By arrangement; *prerequisite*: Permission of instructor.

BIOL-612—Cell and Molecular Biology

Three Credit Hours

An in-depth exploration of the cell surface, organelles, and metabolism of different cell types. This course integrates cell biology, molecular biology, and biochemistry.

Lecture: three hours a week.

BIOL-621—Aquatic Toxicology

Four Credit Hours

An introduction to assessing the effects of toxic substances on aquatic organisms and ecosystems. Topics include general principles of toxicology, fate and transport models, quantitative structure-activity relationships, single-species and community-level toxicity measures, regulatory issues, and career opportunities. Examples will be drawn from marine, freshwater, and brackish-water systems.

Lecture: three hours a week; laboratory: three hours a week.

BIOL-624—Molecular Genetics and Recombinant DNA: Theory, Practice and Issues

Three Credit Hours

The fundamental principles and applications of recombinant DNA technology will be discussed and demonstrated. Emphasis will be placed on sources and preparation of materials for classroom activities. Societal issues involving recombinant DNA technology will also be explored.

Lecture: two hours a week; laboratory: two hours a week.

BIOL-625—Tropical Rainforest and Reef Ecology

Four Credit Hours

The objectives of this experiential course are to survey biodiversity and provide understanding of ecological principles in tropical habitats through physical involvement with the environment. Two co-instructors will lead students on a 10-12 day excursion in forest and reef habitats of the Neotropics, providing natural history instruction and interpretation. Participants will have the opportunity to immerse themselves in the subject by walking forest paths, swimming forest streams, spelunking caves, paddling mangrove swamps, combing beaches, and snorkeling coral reefs. A species list of plants and animals will be assembled for each habitat and readings from the scientific literature, appropriate to the region, will be assigned for analysis and discussion.

BIOL-631—Environmental Physiology

Three Credit Hours

This course will study the effects of such parameters as salinity, oxygen, temperature and elevation or depth on animal physiology and the adaptations made by animals to these environments.

Lecture: two hours a week; laboratory: two hours a week.

Business Administration (BADM)

MBA Core Courses

BADM-702—MBA Essentials I

Three Credit Hours

MBA Essentials I will cover baseline knowledge in the functional areas of business. This course will address communications, legal, leadership, and marketing. *Prerequisite:* None.

BADM-703—MBA Essentials II

Three Credit Hours

MBA Essentials II will cover baseline knowledge in the functional areas of business. This course will lay a foundation in economics, accounting, finance, and operations that the other courses will build upon.

Prerequisite: None.

BADM-705—Managing Innovation

Three Credit Hours

This course focuses on innovation's role in 21st Century organizations. It addresses the need for a systemic approach to building innovation capabilities and the challenges of integrating the many facets of innovation management. Leading innovators and building innovative organizations are covered from both a theoretical and applied approach. Topics addressed include fundamental theories of innovation, developing an innovation strategy, innovation as a business process, the role of the

innovation context including leadership and organization, culture and values, people and skills, processes and tools, and assessing and improving innovation performance. Both classroom and alternative instructional methods will be used throughout the semester.

Prerequisite/Co-requisite: BADM 702, BADM 703.

BADM-719—Information Technology Management

Three Credit Hours

This course introduces the student to the vocabulary of Management Information Systems (MIS) and explores how organizations are using information technology for a competitive advantage and redefining the way in which they interact with their stakeholders.

Prerequisite: None.

BADM-728—Accounting for Executives

Three Credit Hours

This course is designed to provide students with a knowledge of the basic tools and concepts used in managerial accounting and to provide an opportunity for students to employ their knowledge of financial and managerial accounting through projects. The course emphasizes identifying and interpreting relevant accounting information for decision-making by internal and external users. The focus is on the use of accounting information for decision-making, including behavioral and ethical aspects.

Prerequisite: MBA Essentials II (BADM703)

BADM-731—Quantitative Methods for Operations Management

Three Credit Hours

Students explore the role of operations management in building the competitive strength of the firm and in pursuing the firm's goals of customer satisfaction, profit, service delivery, and quality and shareholder wealth. The course integrates classical and modern operations management methodologies with both hypothetical and real-world business cases. Students learn concepts and quantitative algorithms involved in designing and managing operations.

Prerequisite: MBA Essentials II (BADM703)

BADM-734—Case Studies in Finance

Three Credit Hours

This course provides students with a venue for applying the concepts and techniques from the Foundations of Finance course to complex business problems. The course content will be delivered primarily using the case method of analysis. Emphasis will be on teamwork and group analysis of directed and non-directed business finance cases. Students will be responsible for identifying relevant financial issues, offering alternative solutions, and making, justifying and critiquing recommended courses of action. A portion of the course will be devoted to analyzing cases with a significant international component. The course may also utilize simulation as part of the course content.

Prerequisite: MBA Essentials II (BADM703)

BADM-735—Ethical Leadership and Organizational Behavior

Three Credit Hours

This course is a seminar that focuses on the understanding and application of organizational theory and leadership principles. In addition, the course will include components on developing

individual leadership skills and different theories of organizations. The applications component of the course will include a variety of approaches such as cases, films, guest speakers, individual self-assessments, role play, team building exercises, and a leadership portfolio.

Prerequisite: None.

BADM-737—Strategic Marketing

Three Credit Hours

This course examines how organizations gain and maintain a competitive advantage in a dynamic environment. The course emphasizes the analysis of marketing decisions involving product, price, promotion, and distribution variables. Marketing decision-making is explored in both domestic and global settings.

Prerequisite: MBA Essentials I (BADM702)

BADM-740—Global Business Strategy

Three Credit Hours

This comprehensive and integrative MBA capstone course pulls together the concepts, tools, and approaches taught in all the required courses. This course uses a combination of cases which place students in diverse managerial positions and a business simulation which requires the student to act as a senior executive responsible for the strategic decisions of an organization, the course emphasizes the application, execution, and resolution of multi-dimensional problems. The course emphasizes the strategic management of the business unit and the development of a paradigm for strategic analysis, as well as matching internal processes with the implementation of diverse objectives. The focus is on business-level strategy and the role of leadership in improving performance. *Prerequisites:* BADM 728, BADM 731, BADM 734 and BADM 737. *This course should be taken within the last six hours of a student's MBA program of study.*

BADM-754—Strategic Consulting Experience

Three Credit Hours

This course provides opportunities for students to apply knowledge and skills acquired throughout their MBA coursework in a real-world business environment as project consultants. Consulting projects address issues of significance to client organizations, and project teams make recommendations to client management through oral presentations and written reports based on a thorough analysis of the client organization and environment. MBA Capstone course or elective. *Prerequisites:* BADM 728, BADM 731, BADM 734, and BADM 737, or with permission of instructor. *Registration requires permission of MBA advisor.*

BADM-765—Business Plan

Three Credit Hours

This course is designed to focus on researching, developing, writing and presenting business plans with associated financials for a new product and/or service that is not available in the current market place. MBA Capstone course.

Prerequisites: BADM-728, BADM-731, BADM-734, and BADM-737. *Must be taken within the last six hours of a students' MBA program of study.*

MBA Elective Courses

BADM-713/LDRS-723—Communications for Leadership

Three Credit Hours

This course provides insight on the role of organizations as communication systems in which effective writing and speaking are crucial. Emphasis is on developing awareness of verbal and written styles, interpersonal skills, and creating a repertoire of writing and speaking strategies.

Prerequisite: None.

BADM-716—Legal and Ethical Environment for Decision Makers

Three Credit Hours

This course introduces the framework of law and ethics within which businesses operate and provides the student with a broad understanding of common law (contract, tort, and property) as well as a statutory, administrative, and Constitutional law.

Prerequisite: None.

BADM 726—Financial Statement Analysis

Three Credit Hours

This course examines the basic techniques of using financial statement analysis to evaluate an organization's financial performance. Topics include cash versus accrual measures of profitability, working capital management, cash flow forecasting, credit analysis, and valuation. The course assumes some exposure to financial accounting, but the course is aimed at non-accountant managers, lenders, and investors who use financial statement data to evaluate businesses. The case method is the primary learning approach. Students will have an opportunity to work with financial statements from publicly traded corporations, small businesses, start-up businesses, and not-for-profit organizations.

Prerequisite: Accounting for Executives (BADM728).

BADM-750—Lecture in Business Administration

Three Credit Hours

This course may be elected by students to perform advanced study and/or research in a particular area. Special topics covered within the seminar, as well as required prerequisites, are at the discretion of the instructor.

Prerequisite: None.

BADM-751—Lecture in Accounting

Three Credit Hours

This course may be elected by students to perform advanced study and/or research in a particular area. Special topics covered within the seminar, as well as required prerequisites are at the discretion of the instructor.

Prerequisites: MBA Essentials II (BADM703) and Accounting for Executives (BADM-728).

BADM-752—Lecture in Economics

Three Credit Hours

This course may be elected by students to perform advanced study and/or research in a particular area. Special topics covered within the seminar, as well as required prerequisites are at the discretion of the instructor.

Prerequisite: MBA Essentials II (BADM703)

BADM-753—Lecture in Finance

Three Credit Hours

This course may be elected by students to perform advanced study and/or research in a particular area. Special topics covered within the seminar, as well as required prerequisites are at the discretion of the instructor.

Prerequisites: MBA Essentials II (BADM703)

BADM-754—Strategic Consulting Experience

Three Credit Hours

This course provides opportunities for students to apply knowledge and skills acquired throughout their MBA coursework in a real-world business environment as project consultants. Consulting projects address issues of significance to client organizations, and project teams make recommendations to client management through oral presentations and written reports based on a thorough analysis of the client organization and environment. MBA Capstone course or elective. *Prerequisites:* BADM 728, BADM 731, BADM 734, and BADM 737, or with permission of instructor. *Registration requires permission of MBA advisor.*

BADM-755—Lecture in Marketing

Three Credit Hours

This course may be elected by students to perform advanced study and/or research in a particular area. Special topics covered within the seminar, as well as required prerequisites are at the discretion of the instructor.

Prerequisite: MBA Essentials I (BADM702).

BADM-756—Financial Modeling

Three Credit Hours

This course is a hands-on course in spreadsheet and financial modeling, primarily using Microsoft Excel, and covers various topics in financial management and investments. The emphasis will be on the practical application of financial theory.

Prerequisite: MBA Essentials II (BADM703)

BADM-757—Personal Finance

Three Credit Hour

This course will focus on the application of basic financial tools and principles to the student's personal life including the financial planning process, liquidity management, debt management, asset management, and risk management. This course will also include retirement, education and estate planning.

Prerequisite: None.

BADM-762—Negotiation Strategies

Three Credit Hours

This course emphasizes negotiation, the art and science of creating agreements between two or more parties, and introduces students to the effective use of power, persuasion, influence, and control in modern organizations. In this course students first apply theories developed as guides to improving negotiating strategies (the science). Students will then develop and sharpen negotiating skills through realistic cases (the application) with an emphasis on preparation, bidding, distributive and integrative bargaining techniques.

Prerequisite: None.

BADM-764—Entrepreneurship

Three Credit Hours

This course is designed for students interested in creating a business venture, acquiring an existing business, working in industries that serve the entrepreneur, or who wish to become familiar with the concepts, issues, and techniques of new venture creation and entrepreneurship. Tools to be developed include recognition of a venture opportunity, acquisition of information on resources needed for venture creation and survival, development of competitive marketing strategies, and international opportunities.

Prerequisite: MBA Essentials I (BADM702) and MBA Essentials II (BADM703).

BADM-766/LDRS-766—Human Resource Development

Three Credit Hours

This course examines Human Resource Development (HRD) as a field through the learning, development and behavior of humans in social systems. These systems include but are not limited to, workforce, education, and family. Research from Management Science, Education, Psychology, and Sociology strengthen HRD theory and practice. The purpose of this course is to explore the integration of the individual into work organizations by examining work issues in learning, training, leadership, and psychosocial development. A primary focus of this course is on applied performance management informed by human sciences research as a tool that can be applied to productivity.

Prerequisites: None.

BADM-768—Human Resource Management

Three Credit Hours

This course is designed to provide managers with an understanding of the processes of adding strategic human capital to the organization. The course examines the design of work, personnel recruitment and selection, employee compensation and benefits, employee relations and personnel policies, and labor issues. The course is applied management science designed for managers.

Prerequisite: None.

BADM-772—International Management

Three Credit Hours

This course is designed to provide students with an understanding of the issues facing international managers and the environment of the Global Market Place. Some of the challenges include: accommodating different currencies, dealing with a multiplicity of governments, operating effectively in diverse legal environments, being sensitive to and avoiding problems that may arise from cultural differences among people, and the formulation of effective strategies in the complex global environment.

Prerequisite: MBA Essentials I (BADM702)

BADM-774—International Business

Three Credit Hours

This course studies the trend toward internationalization, explores the terminology used in international business, and, via case studies and examples, demonstrates the problems and advantages of the internationalization process.

Prerequisite: MBA Essentials I (BADM702)

BADM-776—International Marketing

Three Credit Hours

This course examines detailed analysis of theories, issues, and decisions facing the global marketing manager. Emphasis is on small and large firms, innovative applications, workshops, and original research projects.

Prerequisite: MBA Essentials I (BADM702).

BADM-778—Investments

Three Credit Hours

This course explores the practical aspects of investment analysis germane to evolution of market securities and derivative instruments evaluation, portfolio analysis and performance evaluation, sources of printed and Internet investment information, and the formulation of investment policies and strategies.

Prerequisite: MBA Essentials II (BADM703)

BADM-782—Advanced Topics in Information Technology

Three Credit Hours

This course may include expert systems, decision theory, decision support systems, artificial intelligence, telecommunications, and/or other contemporary issues in information technology.

Prerequisite: Information Technology Management (BADM-719).

BADM-784—Business and Economic Forecasting

Three Credit Hours

This course addresses the important function of strategic planning. Planning requires accurate forecasts of future sales, capacity, market size, prices, and a myriad of other variables that determine the long-run profitability of the firm. This course will help the student understand and create forecasts for the firm, industry and the economy. Techniques include smoothing, time series analysis, and regression analysis.

Prerequisite: Quantitative Methods for Operations Management (BADM-731).

BADM-786—Contemporary Accounting and Advanced Problems

Three Credit Hours

This course explores the current issues in the field of accounting. Particular issues covered in any given semester will be selected by the course professor and announced at the time of registration.

Prerequisite: Accounting for Executives (BADM-728).

BADM-788—Consumer Behavior

Three Credit Hours

This course consists of the study of domestic and international models of consumer behavior, including key variables from the behavioral sciences. Course content includes research methodologies, case studies, applications to decision-making, and an original student research project.

Prerequisite: MBA Essentials I (BADM702)

BADM-790—Production/Operations Strategies for Manufacturing and Service Industries

Three Credit Hours

This course builds upon previous course work to provide a basis for development of a coherent operations strategy to support the firm's competitive strategy. Using case studies, course content is based upon the programs that have proven successful in global firms and

covers process choice, product development, order coordination inside and outside the firm, and methodologies for developing technology and operations strategies.

Prerequisites: Accounting for Executives (BADM 728), and Quantitative Methods for Operations Management (BADM 731).

BADM-792—Financial Markets and Institutions

Three Credit Hours

This course provides an overview of the key financial institutions (banks, insurance companies, mutual funds, government entities etc.) and markets (stocks, bonds and foreign exchange among others). Also discussed will be the wide array of financial instruments that are available to business and individuals. Particular attention will be paid on risk management and how the various markets and institutions interact with each other. The study of financial markets and institutions will help your understanding of many exciting issues such as the recent financial crises in the United States and around the world. Activities that take place in financial markets have a direct effect on personal wealth, the behavior of consumers and businesses and the well-being on the overall economy.

Prerequisites: MBA Essentials (BADM702 and BADM703).

BADM-795—Independent Study

Three Credit Hours

This is an advanced course that may be taken by graduate students desiring to engage in a research/scholarly project of mutual interest to the student and the faculty member who directs the study. The course is intended to be rigorous. The course structure, evaluation process, and expected outcomes should be clearly delineated by the instructor in advance.

Chemistry (CHEM)

CHEM-520—The Chemistry of Art

Three Credit Hours

This course will address the chemistry involved in the preparation of artists' materials and artwork itself and the chemistry used in authenticating, restoring, and conserving art and artifacts.

CHEM-521—Forensic Science

Three Credit Hours

Forensic Science incorporates concepts of biology, chemistry and physics in learning about the science involved in crime investigations. Hands-on activities will be incorporated to illustrate the techniques. Topics to be covered include fingerprinting, blood typing, disputed documents, DNA analysis, drug and poison detection and identification, and fiber comparison. Actual cases will be studied.

CHEM-522—Nanotechnology for STEM Educators

Three Credit Hours

Nanotechnology is based on the science of designing materials from the atomic or molecular level. It has the potential to impact virtually every area of life, from medicine to ultra-strong materials to electronics to clothing. In this course students will learn about the foundational physics and chemistry behind nanoscience as well as nanotechnology applications.

Civil Engineering (CIVL)

CIVL-502—Sustainability

Three credit hours

This course provides an introduction to the broad topic of sustainability and its application to engineering. A foundation of study on the historical perspective of sustainability leads to a focus on sustainable development, sustainable design.

Prerequisites: BS degree in engineering or related field.

CIVL-504—Natural Hazards and Preservation of Historical Structures

Three credit hours

Engineering and science applications and socio-economic impacts of natural hazards on historic structures. Course provides thorough overview of design, rehabilitation, and other socio-economic decisions related to natural hazards and historical structures.

Prerequisites: BS degree in engineering or related field.

CIVL-506—Geographic Information Systems

Three credit hours

Instruction in Geographic Information Systems (GIS) focusing on data analysis and application methods for engineers, planners and related professions. Fundamental topics include spatial analysis, geostatistical analysis, 3-D modeling, and vector/raster modeling. The focus of the course is on gaining a fundamental understanding of spatial data structures in GIS, geo-spatial data acquisition, geoprocessing, geostatistical methods; visualization, exploration of spatial data; network analysis, terrain mapping, spatial analysis, and modeling. The course will include specific emphasis on urban land use evaluation methods, transportation analysis (dynamic segmentation and routing) and hydrologic modeling.

Prerequisites: BS in mathematics, science, or engineering, or permission from instructor. Familiarity with basic GIS concepts with and either ARC/INFO, ArcView, or ArcGIS highly recommended.

CIVL-508—Monitoring of Civil Engineering Infrastructure

Three credit hours

Design and analysis of instrumentation systems to monitoring of civil engineering infrastructure for the purpose of evaluating performance and/or design. Covered topics include principles of measurement, measurement errors and error analysis, instrumentation sensor types and calibration, data acquisition and signal conditioning, and data management.

Prerequisites: CIV-330 or equivalent or permission from instructor.

CIVL-575—Traffic Engineering Operations

Three Credit Hours

Basic characteristics of motor-vehicle traffic, highway capacity, applications of traffic control devices, traffic design of parking facilities, engineering studies, traffic safety, traffic laws and ordinances, basic statistical analysis, components of traffic systems, measurement of traffic data, characterizing traffic system performance, analysis of existing traffic facilities, and design of traffic facilities for achieving desired system performance.

Prerequisite: CIVL 305 or permission from Department Head

CIVL-576—Roadway Geometric Design

Three Credit Hours

Geometric design of roadways, at-grade intersections, and interchanges, using software programs, in accordance with conditions imposed by driver ability, vehicle performance, safety sustainability, and economic constraints.

Prerequisite: CIVL 302 or permission from Department Head

CIVL-602—Water Quality Modeling and Management

Three credit hours

Water quality analysis and simulation of physical, chemical, and biological processes affecting rivers, lakes, estuaries, and drinking water distribution systems. Included are best management practices based on application of water quality modeling techniques to environmental systems (rivers, lakes, distribution systems, etc).

Prerequisites: CIVL-312 or permission from instructor.

CIVL-604—Aquatic Chemistry

Three credit hours

Quantitative treatment of variables that govern the chemistry of aquatic systems such as lakes, oceans, rivers, estuaries, and groundwater. Emphasis on carbonate in open and closed systems, metal complexation and solubility, and oxidation-reduction reactions.

Prerequisites: CHEM-152/162 or permission from instructor.

CIVL-608—Structural Loads and Systems

Three Credit Hours

Structural engineering applications of analysis methodologies used to determine loads in accordance with ASCE 7. In-depth discussion of minimum design loads and load combinations. Includes overview of various steel and concrete systems. Discusses practical selection and design issues and design of proprietary building materials and components such as steel joists, diaphragms, engineered wood products, etc.

Prerequisite: CIVL 309 or permission from Department Head

CIVL-610—Wood Design

Three Credit Hours

Design of wood framed structures in accordance with the NDS Specification. Course provides thorough overview of practical member and connection design and real world applications. Introduction to wood design and engineering; properties of wood and wood-based materials; design of beams, columns, walls, roofs, panel systems, and connections.

Prerequisite: CIVL 304 or permission from Department Head

CIVL-612—Urban Transportation Planning

Three Credit Hours

A systems approach to the transportation planning process focusing on policy issues and the decision making process. Topics include: 1.) Trip generation modeling - variables influencing trip generation, regression analysis and category analysis; 2.) Trip distribution - modeling factors governing trip distribution, growth-factor methods and gravity models, calibration of gravity models; 3.) Mode split modeling - factors influencing mode choice, discrete choice models; 4.) Route selection - traffic assignment; and 5.) Transportation surveys; transport related land use models, urban structure, urban goods transport. Use of popular transportation planning software will also be covered.

Prerequisite: CIVL 305 or permission from Department Head

CIVL-614—Ground Improvement

Three credit hours

This course provides a thorough overview of several design and construction methods for improving in-situ soil conditions. Covered topics include site exploration; evaluation of in-situ soil conditions via in-situ testing; soil liquefaction; soil shear strength and compressibility; soil nailing; foundation problems for highway embankments; soil grouting; dynamic compaction, vibro-compaction; and vibro-replacement.

Prerequisites: CIVL-410 or equivalent or permission from instructor.

CIVL-616—Deep Foundations

Three credit hours

Design, construction, and inspection of deep foundation systems. Covered topics include effects of deep foundation installations; static capacity and settlement analysis of single pile and pile groups under axial and lateral loads; drilled shaft design, construction, and inspection techniques; deep foundation load testing standards, interpretation, and simulation; non-destructive testing and subsequent analysis; cost analysis of deep foundations.

Prerequisites: CIVL-410 or equivalent or permission from instructor.

CIVL-640—Urban Mobility Infrastructure Policy and Planning

Three Credit Hours

Foundation for understanding transportation systems' relationship to cities and people and managing urban transportation systems, including: 1.) multi-faceted understanding of the historical, spatial, economic, social, and environmental factors affecting transportation issues, 2.) transportation and land use relationships, 3.) transportation as a tool of economic development and growth, 4.) transportation political influences and finance, and 5.) regional, state and federal governmental structure of committees, agencies and oversight.

Prerequisite: Admission to partner graduate degree programs; BS in math, science or engineering; or permission from Department Head

CIVL-642—Public Health, Physical Activity, and Design of the Built Environment

Three Credit Hours

Multidisciplinary evaluation of cities, suburban communities and neighborhoods to identify positive and adverse effects of the built environment on levels of physical activity and measures of public health, with an emphasis on adoption of approaches for improving desirable outcomes. The course focuses on establishing basis of need and potential benefits from implementation of optimal solutions to the challenging dilemma of built environment, urban mobility, transportation infrastructure networks, economics, sustainability, livability, and community wellness. Interconnections between the fields of public health, public policy and engineering design are identified. Students are equipped with proficiencies needed to create more healthy communities through an emphasis on physical activity.

Prerequisite: Admission to partner graduate degree programs; BS in math, science or engineering; or permission from Department Head

CIVL-650—Special Graduate Topics in Civil Engineering

Three Credit Hours

Selected graduate topics in civil engineering. The offering of this course will depend upon the interest of the students, the availability of an instructor, and the approval of the department head. Since the content of this course may change, a student may repeat the

course for credit with the consent of the department head.
Prerequisites: Graduate status and permission from department head.

CIVL-655—Masonry Structural Design

Three Credit Hours

Introduction to design of structural elements for masonry buildings. Lintels, walls, shear walls, columns, pilasters, and retaining walls are included. Reinforced and unreinforced elements of concrete or clay masonry are designed by allowable stress and strength design methods. Introduction to construction techniques, materials, and terminology used in masonry.

Prerequisite: CIVL 304 or permission from Department Head

CIVL-657—Indeterminate and Matrix Structural Analysis

Three Credit Hours

Analysis of indeterminate structures using moment distribution, energy methods such as virtual work and Castigliano's Theorem. Matrix displacement method derived and simplified to a form suitable for structural engineering applications. Truss and frame applications with modifications for symmetry, internal releases, and support settlements. SAP2000 and other structural engineering software is used to compare with analytical solutions.

Prerequisite: CIVL 309 or permission from Department Head

CIVL-711—Design of Masonry, Wood and Cold Formed steel Structures

Three Credit Hours

Design of masonry structures in accordance with ACI specifications, wood framed structures in accordance with NDS specifications, and Cold Formed Steel Structures in accordance with AISI specifications. Course provides thorough overview of practical member and connection design and real world applications.

Prerequisite: CIVL 309 or permission from Department Head

CIVL-712—Design of Coastal Structures and Bridges

Three Credit Hours

AASHTO based design of bridge structures and foundation elements. Design of piers and seawalls for coastal applications.

Prerequisite: CIVL 404 and CIVL 406 or permission from Department Head

CIVL-713—Design of Civil Engineering Systems for Natural and Manmade Hazards

Three Credit Hours

Design of infrastructure for hurricanes, earthquakes, floods, tornadoes, and man-made or accidental explosions. Focus on design philosophy and practical examples. Structural design, site layout, and economics discussed in detail.

Prerequisite: CIVL 309 or permission from Department Head

CIVL-714—Advanced Steel Design

Three Credit Hours

Advanced design of structural steel buildings emphasizing the relationship between design and response of the structural system; theoretical basis of building code provisions; limit state and plastic design; beam-columns; plate girders and composite sections and connections. All design provisions in accordance with AISC 360.

Prerequisite: CIVL 406 or permission from Department Head

CIVL-715—Advanced Reinforced Concrete Design

Three Credit Hours

Second course in design of reinforced concrete structures; advanced concepts in analysis and design of beams, columns, and slabs; introduction to prestressed concrete. All design provisions in accordance with ACI 318.

Prerequisite: CIVL 404 or permission from Department Head

CIVL-716—Prestressed Concrete

Three Credit Hours

Introduction to the analysis, behavior, and design of prestressed concrete members and structures. Allowable stress design and strength design of prestressed concrete members, shear design, loss of prestressed force, design of continuous structures.

Prerequisite: CIVL 404 or permission from Department Head

CIVL-718—Matrix and Finite Element Analysis

Three Credit Hours

Finite element method derived and simplified using matrix approach to truss, beam, plate, and shell structures. Solid elements also discussed. Mesh layout and refinement, convergence characteristics, and solution accuracy proven. SAP2000 and other structural engineering software is used to compare to analytical solutions.

Prerequisite: CIVL 657 or permission from Department Head

CIVL-719—Elastic Stability of Structures

Three Credit Hours

Stability of elastic structural components under conservative loads. Precise definitions of stability; energy approaches; Rayleigh-Ritz and Galerkin methods utilized with primary applications to frame structures. SAP2000 and other structural engineering software is used to compare to analytical solutions.

Prerequisite: CIVL 309 or permission from Department Head

CIVL-720—Dynamic Analysis of Structures

Three Credit Hours

Analysis and design of structures subjected to dynamic loading; response of lumped and distributed parameter systems of one or many degrees of freedom; approximate design methods; introduction to earthquake analysis and design.

Prerequisite: CIVL 309 or permission from Department Head

CIVL-721—Earthquake Engineering for Structural Engineers

Three Credit Hours

Effects of earthquake-induced forces on buildings, bridges, and other structures; development of design codes and their application to the design of structures to resist seismic forces; fundamental structural dynamics and analysis techniques used to compute the response of structures or obtain design forces.

Prerequisite: CIVL 309 or permission from Department Head

CIVL-730—Geotechnical Earthquake Engineering

Three Credit Hours

Fundamentals of soil dynamics, plate tectonics and earthquakes; application of the concepts to seismic ground response, design ground motions, soil liquefaction, site response analysis, seismic slope stability, dynamic lateral earth pressure, and soil improvement.

Prerequisite: CIVL 409, 402 and 410 or permission from Department Head

CIVL-731—Geo-Environmental Engineering

Three Credit Hours

Geo-environmental engineering is a multi-disciplinary area of study that involves various aspects of geotechnical engineering, environmental engineering, hydraulics/hydrology, and groundwater engineering. The course focuses on the following two specific technical issues: (1) characterization and remediation of contaminated soil and groundwater; (2) design of waste containment barriers (e.g., liners, covers, vertical barriers) used for waste remediation.

Prerequisite: CIVL 409, 402, 322 and 408 or permission from Department Head

CIVL-732—Advanced Soil Mechanics

Three Credit Hours

Study of stresses in soils, stress-strain and shear strength properties of soil, plastic equilibrium of soil masses, failure conditions, earth pressures, with applications to geotechnical engineering design.

Prerequisite: CIVL 409 and 402 or permission from Department Head

CIVL-733—Advanced Foundation Design

Three Credit Hours

The engineering design process is demonstrated through use of practical problem-solving methods for public infrastructure and built environment projects. Analysis and design of deep foundations, earth slopes, retaining walls, sheet-pile walls, and braced excavations, anchored bulkheads, reinforced earth, and underpinning

Prerequisite: CIVL 409, 402 and 410 or permission from Department Head

CIVL-734—Soil Behavior

Three Credit Hours

Detailed study of physiochemical aspects of soil behavior, stabilization of soils, and engineering properties of soils.

Prerequisite: CIVL 409 and 402 or permission from Department Head

CIVL-740—Transportation Safety Engineering

Three Credit Hours

Methodology for conducting transportation accident studies, accident characteristics as related to operator, facility, and mode, statistical applications to accident data, current trends and problems in transportation safety.

Prerequisite: CIVL 305 or permission from Department Head

CIVL-741—Travel Demand Forecasting

Three Credit Hours

In-depth coverage of travel-demand forecasting theory and the four-step process, site traffic impact analysis, and disaggregate travel demand models. Theory and method of forecasting travelers' choices of route, mode, destination, departure time, trip frequency and origin location in congested transportation networks.

Prerequisite: CIVL 305 or permission from Department Head

Criminal Justice (CRMJ)

CRMJ-500/PSCI-500—Seminar in Social Science

Three Credit Hours

An interdisciplinary introduction to the social sciences with an emphasis on the perspectives and patterns of inquiry of several subfields. This course surveys the empirical and theoretical contributions of different social science disciplines in order to provide a fundamental understanding of the dynamics of individual and group behavior. Topics include ethics, social science methodology, and the key criticisms of these methods.

CRMJ-501/PSCI-501—Research Methods in Social Science

Three Credit Hours

An examination of methods in the scientific study of social phenomena with emphasis given to the systematic study of society and contemporary research problem in the social sciences, including research design, data collection, data analysis, and computer applications.

CRMJ-510—Topics in Criminal Justice

Three Credit Hours

Selected special topics or problems in the general area of criminal justice to fit the needs of students as well as the specialized knowledge of the faculty.

CRMJ-515/INTL-515/PSCI-515—Topics in Homeland Security

Three Credit Hours

Selected special topics or problems in the general areas of homeland security to fit the needs of students as well as the specialized knowledge of the faculty.

CRMJ-555—Leadership Application Course in Criminal Justice

Three Credit Hours

Selected special topics in leadership application within the field of criminal justice based on the specialized knowledge and research interests of the faculty. This course satisfies the “leadership application” requirement for students in the leadership graduate certificate program.

CRMJ-560—Homeland Security and Criminal Justice Administration

Three Credit Hours

Seminar on effective management principles and practices as they apply within homeland security organizations. Organizational and management theories are analyzed and applied to the contemporary structure of homeland security organizations with emphasis given to a review of the research related to the development of leadership skills for homeland security management.

CRMJ-561—Drugs and Crime

Three Credit Hours

This course of study explores and analyzes issues involving drugs and crime. Drug types, drug offenders, drug trafficking/global smuggling, money/laundry, law enforcement/interdiction, governmental response, domestic and international drug policy,

drug-crime correlation, drug testing, and the drug relationship to other social problems are examined. Future trends and current dilemmas are investigated regarding the effectiveness of law enforcement, the “war on drugs,” and drug usage.

CRMJ-562—Comparative Criminal Justice Systems

Three Credit Hours

An examination of the ideology, structure, and justice processes of various criminal justice systems in the United States, Europe, Asia, Africa, Middle East and Latin America This comparative study involves the analysis of diverse social control, legal, police, court, correction, and juvenile systems from representative justice approaches around the world. Variations among countries in crime and deviance phenomena, as well as, comparative normative values, practices, and ethics of justice system practitioners are explored. Contemporary dilemmas and issues involving crime and criminal justice practices among divergent justice schemes are discussed.

CRMJ-563—Criminal Evidence

Three Credit Hours

A graduate level discussion of types of evidence, collection of evidence, the chain of custody, and procedures relating to its introduction into judicial proceedings. Special attention is given to Fourth Amendment constitutional issues and the changing nature of the judicial order.

CRMJ-564—Juvenile Justice

Three Credit Hours

A study of juvenile delinquency and the operation of the American juvenile justice system. The course explores classical and contemporary theories of juvenile delinquency and status offending, as well as the effects of family, peers, school, gang affiliation, and drug usage on youthful offenders. In examining the juvenile justice system, the course investigates the historical development and individual operating components. (e.g., police, courts, and corrections) of the system. Consideration is given current and future issues involving youth and delinquency such as curfew, boot camp, youth violence, drug usage, and court waiver.

CRMJ-565—Corrections

Three Credit Hours

An overview of the American correctional system including prisons, jails, probation and parole. In addition to the historical development of punishment and corrections, the course explores issues involving the effectiveness of formal punishment, deterrence effects, punishment types, and the death penalty. Discussions also include prison inmate culture, prison gangs, prison life, inmate civil rights and litigation, problems and dilemmas of early release, probation, parole, and recidivism. Future trends and prospects for an increasing prison and parole population are discussed.

CRMJ-568/INTL-568/PSCI 568—International and Domestic Terrorism

Three Credit Hours

In-depth seminar on the nature of international, transnational, and domestic political violence, with some attention to the

phenomenon of “state terrorism” (international repression) and its potential impact on the conduct of American foreign policy. The course also reviews and critiques current explanations for terrorist behavior. Issues addressed include conceptualizing and defining terrorism, the structure of violent politics, the lessons and patterns from the history of contemporary political violence, State support for terrorism, and counterterrorism as a public policy problem.

CRMJ-569/PSCI-569—National Security Policy

Three Credit Hours

Seminar which examines the components of United States security policy. Course discusses the roles and agencies involved in the development of national security policy. Consideration given to factors, both internal and external, affecting national security.

CRMJ-570—Homeland Security

Three Credit Hours

Seminar on homeland defense and security. The course takes an in-depth look at the agencies involved in homeland security and the interagency process which exist to integrate the services of federal agencies and state and local governments with armed forces and defense agencies.

CRMJ-572—Ethics and Integrity in Homeland Security

Three Credit Hours

A study of the role of justice, ethics, integrity, and ethical behavior in the homeland security. The course examines ethical issues regarding the application of law and challenges associated with the protection of American citizens against internal and external threats. Consideration is given to the function of ethical conduct in the rule of law, use of authority, and exercises of governmental power as part of U.S. government responses to threats to homeland security. The course includes a thorough review of issues related to the rules of engagement, the U.S. Patriot Act, Border Patrol and Security, the Transportation and Safety Administration (TSA) regulations, and the treatment of terrorists. Ethical dilemmas and practical applications are explored.

CRMJ-580—Introduction to Intelligence

Three Credit Hours

This course provides an introduction to the field of intelligence and national security. We will examine the history and development of United States intelligence community. Specific topics include the intelligence cycle, the relationship between intelligence professionals and policy makers, the restructuring of the U.S. intelligence community, oversight and accountability, and covert action as a policy option. The moral and ethical implications of intelligence practices will also be discussed.

CRMJ-581—Intelligence Research and Analysis

Three Credit Hours

This course seeks to develop in students the skills and abilities necessary for conducting basic intelligence analysis. A variety of exercises and practical applications are used to foster critical thinking skills, the planning and coordination of data

collection from a variety of sources, and the use of analytic tools to establish connections between people, places, events and other entities. Students are exposed to computer software programs that visually depict complex relationships. Cross listed as INTL 581.

CRMJ-582—Intelligence Theory Application

Three Credit Hours

This course introduces the student to the discipline of intelligence and provides the student with an understanding of how intelligence systems function and how intelligence estimates and products are derived. By understanding the basic psychology of intelligence, organizational trends and cognitive cultural difference, the student will gain insight to how intelligence analysis actually transpires.

CRMJ-583—Transnational Organized Crime

Three Credit Hours

This course will examine the diverse dimensions of transnational crime. Students will examine and discuss historical and contemporary patterns, modus operandi, capabilities, and vulnerabilities of transnational criminals and organizations. Course content includes an introduction to transnational crime, a discussion of the “problem” of transnational crime, a review of illicit activities of transnational criminal organizations, an examination of the link between transnational crime and terrorism, a review of contemporary approaches to combating transnational crime, and area studies covering Europe, Russia, the Middle East, Asia, Africa and The Americas. Area studies will include a review of American, Italian, French, Mexican, Asian, Middle Eastern, & African criminal enterprises, traditional organized crime, outlaw motorcycle gangs, and other transnational criminal enterprises.

CRMJ-585—Topics in Intelligence

Three Credit Hours

Selected special topics or problems in the general area of intelligence to fit the needs of students as well as the specialized knowledge of the faculty – possible offering: Narco-terrorism, Weapons of Mass Destruction and Emerging Threats. Topics include the intelligence cycle, the relationship between intelligence professionals and policy makers, the restructuring of the U.S. intelligence community, oversight and accountability, and covert action as a policy option. The moral and ethical implications of intelligence practices will also be discussed.

CRMJ-600—Homeland Security Internship

Three Credit Hours

This course provides the student with an opportunity to explore career interests while applying knowledge and skills learned in the classroom to real-world problems encountered in Homeland Security agencies/ the Intelligence Community (IC). The experience also helps students gain a clearer sense of future learning needs and provides an opportunity to build professional networks.

Prerequisite: Consent of Department or Program Head

Computer Science (CSCI)

CSCI-563—Programming for Teachers

Three Credit Hours

This course introduces computer programming and problem-solving using a modern programming language. Students will learn language syntax and basics of event-driven programming. Concepts and methods of object-oriented programming and design, creating applications using a development cycle approach, and disciplined coding style are included. In addition, students will also learn about data organization and collection, database construction, and manipulating data within a database. Students will be required to complete tutorial exercises and projects that can be used with middle and high school students. Note: This course cannot be used for the Master of Science in Computer and Information Science.

Note: May be substituted for MATH 663.

CSCI-601—Data Modeling and Database Design

Three Credit Hours

Topics include conceptual, logical, and physical data modeling, data analysis, relational database design and normalization, query languages, query processing, administration, and CASE tools. A database design project is part of the requirement and includes hands-on data modeling, design, development, and implementation.

CSCI-602—Foundations of Software Engineering

Three Credit Hours

A survey course in software engineering processes and methodologies. This course includes software life cycles, planning and managing projects, capturing and managing requirements, analysis and design, implementation, software testing and quality assurance, and risk analysis in software development. Emphasized are team-based development, quality standards, object-oriented design, and CASE (computer aided software engineering) tools.

CSCI-603—Object-Oriented Design Patterns

Three Credit Hours

A course in software design using design patterns as a tool for communicating software design solutions and as an aid in software refactoring. Creational, structural and behavioral patterns are emphasized. Also covered are finding and documenting software development patterns. The Unified Modeling Language is used as the design tool for software patterns and programming projects are in an object-oriented programming language.

CSCI 604—Distributed Computer Systems Architecture

Three Credit Hours

This course covers basic techniques for the design and construction of distributed systems. Its aim is to give the skills needed to build simple systems and to identify key issues for the analysis of distribution problems.

CSCI-612—Advanced Computer Architecture

Three Credit Hours

This course covers various topics relevant to clustering including the following: interconnection networks, protocols, high performance I/O, load balancing, availability, programming models and environments, parallel algorithms, and applications. The course is lab intensive and includes the implementation of parallel algorithms on a parallel cluster.

Prerequisites: CSCI-604 or an undergraduate course in operating systems.

CSCI-614—Advanced Operating Systems

Three Credit Hours

This course covers a broad range of advanced operating systems concepts including protection, security, memory management, kernels, file systems, synchronization, naming, networks, and distributed systems as well as recent trends in operating systems design. Specific aspects of operating systems which support distributed computing will be emphasized.

Prerequisites: CSCI-604 or an undergraduate course in operating systems.

CSCI-616—Automata Theory

Three Credit Hours

The theory of finite state machines and regular expressions are applied to the design of switching circuits, components of compilers such as lexical analysis, pattern-matching, text-editors, unifications as needed in Prolog or for automated deduction, and almost any program which processes under commands. Undecidable problems and intractable problems are explored.

CSCI-618—Programming Languages

Three Credit Hours

The course surveys the principles of programming language design and the issues related to their implementation. Topics will include a comparison of the major programming paradigms: imperative, functional, logic, and object-oriented. Also covered are data types, methods of specifying the semantics of language constructs, and concurrency.

CSCI-631—Privacy and Security Issues

Three Credit Hours

A survey of the principles and practices related to computer security. The course concentrates on the problems of security associated with computer systems and emphasizes the application of cryptography to address those problems.

CSCI-632—Data Communications and Networking

Three Credit Hours

An introduction to data communications and computer networking. Topics include LAN topologies, transmission media, error detection, packet switching networks, internetworking of heterogeneous network technologies, Internet protocol suites (with emphasis on TCP/IP), the client/server paradigm, the BSD Socket interface, network security, and network applications.

CSCI-633—Semantic Web Principles and Practice

Three Credit Hours

This course covers the emerging technology supporting the Semantic Web with machine-processable content. Students will engineer and implement ontologies, associated metadata and logical inference systems. Covered are specialized languages such as Extensible Markup Language (XML), Resource Description Framework (RDF), and Ontology Web Language (OWL) and query associated query languages.

CSCI-634—Project Change and Management

Three Credit Hours

Managing projects within an organizational context, including the processes related to initiating, planning, executing, controlling, reporting, and closing a project form the major portion of this course. Project integration, scope, time, cost, quality control, risk management, and managing the changes in organization resulting from introducing or revising information systems are also included.

CSCI-636—Information Technology Policy, Strategy, and Governance

Three Credit Hours

This course will consider the development and implementation of policies and plans to achieve organizational goals, the defining of systems that support the operational, administrative and strategic needs of the organization, and the study of approaches to managing the information systems function in organizations.

CSCI-638—Advanced Topics in Database Systems

Three Credit Hours

Topics such as algorithms for query processing and optimization, physical database design, transaction processing, concurrency control, database backup and recovery techniques, database security, distributed databases, multimedia databases, object and object-relational databases, data warehousing, and data mining.

Prerequisite: CSCI-601.

CSCI-641—Advanced Cybersecurity

Three Credit Hours

This course will cover the techniques used to secure cybersystems. Topics covered will include security policies, computer security management and risk assessment, secured network protocols, software security issues, ethical and legal aspects of cybersecurity, and disaster recovery. Special emphasis will be given to designing, deploying, and managing complete secured cybersystems.

Prerequisite: CSCI- 631 and CSCI- 632.

CSCI-654—Software Requirements Analysis and Specification

Three Credit Hours

An introduction to the software requirements engineering process. Topics to include: feasibility studies, risk, requirements elicitation, modeling, analysis, specification, and validation.

Prerequisite: CSCI-602.

CSCI-555—STEM Education through Robotics

Three Credit Hours

Use the LEGO Mindstorms Robotics kit to build, test and program robots to accomplish various tasks. This exciting fusion of physics, mathematics, computer science and artistic expression can really draw students and teachers into active learning and experimentation. Hands-on experience will provide strategies and projects that teachers can use with middle and high school students; advanced options are available for those who want to go beyond the basics. Each assignment, project or test will have a due date that will be posted online. Access to a Mindstorms robotics kit with software is required for the course.

CSCI-656—Software Systems Design and Implementation

Three Credit Hours

An introduction to the issues, techniques, strategies, representations, and patterns used in designing and implementing

software. Possible design topics include: specification of internal interfaces, architectural design, data design, user interface design, design tools and evaluation of design. Possible implementation topics include: language-oriented issues, construction technologies, tools and formal construction methods.

Prerequisites: CSCI-602 and CSCI-603.

CSCI-657—Embedded Systems Design

Three Credit Hours

This course is an introduction to specifying, designing, implementing and testing (real-time) embedded systems. Topics include the embedded system life cycle, choosing a processor, hardware/software partitioning, design techniques, cross-platform development, debugging, testing and integration. Implementation languages may include Java, C/C++ or assembly.

Prerequisites: CSCI-602 and CSCI-604.

CSCI-658—Software Testing and Maintenance

Three Credit Hours

An introduction to the concepts and methods associated with software testing and maintenance. Testing topics to include: testing as part of requirements engineering and software design, test plan writing, and static and dynamic testing. Maintenance topics to include: an overview of corrective, adaptive, perfective and preventive maintenance activities as well as organizational managerial issues.

Prerequisite: CSCI-602.

CSCI-659—Service-Oriented Computing

Three Credit Hours

Service-Oriented Computing is a term that describes software systems that combine Service-Oriented Architecture (SOA) and Business Process Management (BPM) layers. This course explores both SOA and BPM, demonstrating how business and IT concerns can be aligned. Students will gain experience with service-oriented development, process modeling and execution, and securing services.

CSCI-663—Programming for STEM Educators

Three Credit Hours

This course introduces programming and problem-solving using Visual Basic. Students will learn Visual Basic syntax, and basics of event-driven programming while working with variables, constants, data types, and expressions. Problem solving and decision-making are integrated as students also explore looping and multiple forms, using menus, common dialogs, procedures, functions and arrays, debugging, creating executable files, and distributing a Windows application. Concepts and methods of object-oriented programming and design, creating applications using a development cycle approach, and disciplined coding style are included. In addition, students will also learn about data organization and collection, file organization, sort and search techniques, database construction, and manipulating data created in Microsoft Access using Visual Basic.

Note: May be substituted for MATH 563.

CSCI-670—Developing Mobile Applications

Three Credit Hours

This hands-on, project-oriented course explores the principles and tools involved in the design and construction of applications for mobile devices. Topics include the

platform application architecture, mobile application lifecycle, managing application resources, designing user interfaces, data storage options, integrating audio and video, location-based services, cross-platform development using a mobile device emulator, and porting applications to actual devices. Students will work individually or on small teams to design, develop, and deploy several mobile applications.

CSCI-672—Human-Computer Interaction

Three Credit Hours

Introduction to human computer interaction and user interface development. Topics include human factors of interactive software, interactive styles, design principles and considerations, development methods and tools, interface quality and evaluation methods. This course stresses the importance of good interfaces and the relationship of user interface design to human-computer interaction. It is intended for students whose future work may involve software development.

CSCI-674—Introduction to Computer Graphics

Three Credit Hours An introduction to the fundamental principles of computer graphics. Using standard graphics libraries, students will learn these principles by writing a series of programming projects.

CSCI-690—Special Topics in Computing

Three Credit Hours

A course in the special study of an advanced or new topic in computer science, information science or software engineering. This course may be repeated for additional credit, as the topic change.

Prerequisite: Permission of the instructor.

CSCI-691—Independent Study

Three Credit Hours

This course consists of individual study of an agreed-upon topic under the direction of a faculty member and following a course of reading and other requirements proposed by the student and established by negotiation with the director. This course is intended to provide graduate students with an opportunity to study in an area of computer science, software engineering or information systems that is not generally offered. The course may be repeated once.

CSCI-698—Project Thesis

Three Credit Hours

Project thesis is a three-credit hour course for the completion of a formal master's project thesis under faculty direction. A project thesis is characterized by a research project that applies or extends course topics through systems development.

Prerequisites: Completion of the four core courses CSCI-601, CSCI-602, CSCI-603, and CSCI-604, and approval by the MSCS program director.

CSCI-699—Research Thesis

Six Credit Hours

Research Thesis is a six-credit hour course for the completion of a formal master's research thesis under faculty direction. A research thesis is a traditional research project characterized by a comprehensive paper on a research topic.

Prerequisites: Completion of the four core courses CSCI-601, program director.

Education (EDUC)

EDUC-500—Foundations of American Education

Three Credit Hours

This course provides an introduction to the historical, political, sociological, and philosophical foundations of education. Emphasis is on the complex relationship between society and school. Issues regarding race, class, gender, and culture within the educational system are addressed in the context of fostering educational opportunity and ameliorating inequalities. A historical context also is established which allows for critical examination of events, individuals, and ideas that have influenced the development of education in the United States. Through an integration of knowledge in the foundations of education, the course prepares reflective decision-makers who can critically examine various schools of philosophical thought and political issues related to education.

EDUC-501—Methods and Materials of Middle and High School Teaching

Three Credit Hours

Study of the aims, methods, and materials employed in middle & high schools; organization of subject matter; motivation and direction of learning; development of attitudes, appreciations, and ideas; classroom presentation of formal materials; conducting informal activities; provision for individual differences; measurement of educational outcomes; and enhancement of personal and professional growth. The focus of the course is the application of the learner-centered conceptual base in the process of teaching their discipline specialty. A. English; B. Biology; C. Social Studies; D. Mathematics.

EDUC-504—Teaching in the Middle School

Three Credit Hours

This course surveys the current practices in middle schools in terms of objectives, methods, and materials. The student is involved in practical application of these practices as they relate to the organization of subject matter, the motivation of pupils, the achievement of learning outcomes, and the evaluation of learning experiences.

EDUC-505—Individual Instruction

Three Credit Hours

Emphasis upon current approaches and strategies utilized in the individualized programs in the classrooms. Management systems essential to individualized instruction will be emphasized.

EDUC-508—Remedial Strategies in Reading and Language Arts

Three Credit Hours

A course for practicing educators which analyzes varying strategies for helping the problem learner primarily in the literacy areas of reading and the language arts. The course covers techniques at all grade levels and reviews the literature as to teaching effectiveness. Case studies are required.

EDUC-512—Data Collection and Analysis

Three Credit Hours

Coursework designed to introduce the graduate student to quantitative methods to include construction of assessment instruments, analysis, and interpretation of quantitative data. Students will be required to develop minimum competence in use of microcomputers for descriptive statistical analyses and word processing. Emphasis will be placed on the development of skills in critical analysis of literature relating to effective schools. This ability to analyze research data should result in improved by professional performance.

EDUC-514—The Exceptional Child in the School

Three Credit Hours

Coursework is designed as an introduction for students with little or no background or experience in special education and is appropriate for students from various fields as well as for those who anticipate further study and future careers in special education. An interdisciplinary approach is used in the study of learning and behavior characteristics of children and youth with exceptionalities. There is a focus on cause, identification, evidence-based practices, and educational and community programs for individuals with exceptionalities.

EDUC-515—Introduction to the Counseling Profession

Three Credit Hours

Overview and orientation to counseling profession including history, roles, functions, settings, specialties, organizations, credentialing, ethical, legal, and professional issues.

EDUC-516—Research Design

Three Credit Hours

Research Design is intended for those students who will be conducting and producing research studies. The course examines the various descriptive and experimental models for data analysis (in the behavioral sciences), with emphasis placed on the fundamentals of planning and inferential statistical techniques.

Prerequisite: EDUC-517 or equivalent.

EDUC-517—Statistics in Education and Psychology

Three Credit Hours

A course to provide skill in treatment of research data including descriptive and inferential statistics. Some experience with analysis of published statistical research in the fields of education and psychology will be provided.

EDUC-520—Professional Internship

Six Credit Hours

A supervised clinical teaching experience conducted in a public school. This is a full-time, entire semester internship. Each student also attends weekly evening seminars. This last course in the MAT sequence requires an application to be filed two semesters prior to internship. Application forms are available on the School of Education website.

Prerequisite: all other program of studies requirements, including a minimum of 75 hours of field experiences in public schools. Passing scores on the PRAXIS II specialty area examinations are required before enrollment in this course.

EDUC-521—Program Planning, Management, and Evaluation in School Counseling

Three Credit Hours

The purpose of the course is to prepare school counselors to work within elementary and secondary school systems. A model for planning, developing, implementing, and evaluating a comprehensive guidance and counseling program with emphasis on student development and competencies will be presented. The school guidance counselor's role and function will be discussed as a balance of responsive services, systems support, individual planning, and guidance curriculum. Students will develop resources, classroom guidance curricula and group counseling materials that they can use in their fieldwork experiences and in the initial stages of their careers.

Prerequisite: EDUC-515

EDUC-522—Critical Educational Issues in a Multicultural Society

Three Credit Hours

Coursework includes a study of contemporary issues/trends, internal and external to elementary and secondary school systems which impacts on the learner. The course is designed to encourage students to examine issues/trends within the context of their present and future career interests.

EDUC-524—Techniques of School Supervision

Three Credit Hours

Coursework examines the criteria needed for effective school supervision at all levels. Administrative candidates explore the technical and interpersonal skills, functions and knowledge required to effectively evaluate faculty and staff.

EDUC-525—Transition to the Profession

Three Credit Hours

This course is for candidates seeking SC teacher certification. The purpose is to provide each candidate an opportunity to demonstrate his/her ability through successful completion of all ADEPT written materials, reflections and a professional portfolio. (Must be taken concurrently with Student Teaching Internship - EDUC 520).

EDUC-527—Finance and Business Management

Three Credit Hours

Coursework includes procedures and problems relating to financing public education, theory of taxation, types of taxes, practices of education finance, federal, state, and local support of education, budget procedures, financial accounting, purchasing, insurance, inventories, and school maintenance.

EDUC-528—School Administration

Three Credit Hours

Coursework is designed for school personnel preparing for administrative positions. The course involves a study of the basic concepts involved in planning, organizing, managing, and evaluating public schools.

EDUC-529—Emerging Technologies for School Administration

Three Credit Hours

This course is designed for practicing and prospective educational administrators. The course focuses on technology planning, leading with new technologies, professional development, infrastructure, systematic change, and legal and social issues related to technology. The course final project and

presentation is the development of strategic initiatives to enhance student achievement.

EDUC-531—Principles of Elementary Curriculum

Development

Three Credit Hours

Coursework focuses on the study of underlying principles of curriculum development and organization including curriculum evaluations and current issues and trends in the subject fields. Attention is given to the learner-centered decisions teachers, administrators, and others educators must make about elementary curriculum.

EDUC-532—Principles of Middle or High Curriculum Development

Three Credit Hours

Coursework includes the study of underlying principles of curriculum development and organization including curriculum evaluations and current issues and trends in the subject areas. Attention is given to the learner-centered decisions teachers, administrators, and others educators must make about secondary curriculum.

EDUC-535—Organizational Theory and Behavior

Three Credit Hours

Coursework includes a study of the school organization as a social system, supervision and curriculum, control, authority, change, planning strategies, and organizational dynamics.

EDUC-536—Educational Psychology

Three Credit Hours

This course provides an introduction to educational psychology and explores the process of learning throughout the life span. Emphasis is placed on the application of psychological concepts, theoretical principles, and research findings to the planning and implementation of effective instructional strategies in the classroom. Moreover, through this course graduate students who are preparing for employment in the field of education are acquainted with many facets of the teacher's role in the teaching/learning process. Class discussions, activities, and field experience focus on the connection between theory and practice and provide students with opportunities to apply psychological principles and solve practical problems for personal and professional growth.

EDUC-537—Student Development Services in Higher Education

Three Credit Hours

Overview of the historical development of the counseling and student affairs profession, as well as legal and ethical codes, and skills needed in the profession. (For Student Affairs major, this course replaces EDUC 515, Introduction to the Counseling Profession.)

EDUC 538—Theories of Student Development in Higher Education

Three Credit Hours

This course provides an overview of theories of student development in higher education as it applies to the cognitive and psychosocial development of students and the influence of the college environment.

EDUC 539—Higher Education Administration

Three Credit Hours

This course provides an overview of the process of organizing the personnel and financial resources needed to effectively meet student development and institutional goals and objectives. This course will introduce students to basic human and fiscal management concepts and skills.

EDUC-540—Integrative Foundations and Teaching in American Education

Five Credit Hours

This first pre-professional block format course provides an introduction to the historical, political, sociological, and philosophical foundations of education as well as methods and materials of teaching middle & high school. The integrated approach includes learner similarities and differences, motivation and direction of learning, provision for individual differences, measurement of educational outcomes, organization of subject matter, legal issues, and enhancement of personal and professional growth. Learner-centered in nature, this course is intended to begin the process of developing professional educational leaders. 35 hours of field experience is required for this course. During the field experience, the teacher candidate will observe, assist and teach in a secondary school setting under the supervision of a classroom teacher who is certified in the candidate's chosen content area.

EDUC-541—Integrative Educational Psychology and Exceptional Child

Five Credit Hours

This second pre-professional block format course provides an introduction to educational psychology and exceptional children. In the course, teacher candidates will explore the process of learning throughout the life span with emphasis on both normal development and exceptionalities. Emphasis is placed on the application of psychological concepts, theoretical principles, and research findings to the planning and implementation of effective instructional strategies in the classroom so that all children can learn. Teacher candidates will also explore cause, identification, and educational and community programs for individuals with exceptionalities. 20 hours of field experience is required for this course. During field experiences for this course, the teacher candidate will have the opportunity to observe and work in a variety of settings with students who have normal development and students who have exceptionalities.

EDUC-542—Teaching Reading and Writing in Middle and High School Content Areas Through Applied Research

Five Credit Hours

This third pre-professional block format course is designed for the middle school and high school teacher emphasizing pupil diagnosis of reading and writing skills followed by instructional decision making directed toward a balanced teaching approach. Quantitative and qualitative methods of research including construction of assessment instruments, analysis, and interpretation of data will be integrated into the course content. Students will be required to develop minimum competence in use of microcomputers for descriptive statistical analyses and word processing. Emphasis will be placed on the development of skills in critical analysis for instructional improvement. 20 hours of field experience is required for this course. During field experiences, teacher candidates will use a research approach to focus on assisting middle and/or high school

student(s) improve their literacy skills in the teacher candidate's chosen content areas.

EDUC-543—Teaching, Learning and Assessing with Technology

Three Credit Hours

This course provides an overview of new and emerging technologies and how they are changing the way educators teach and students learn. These new advances enable students to engage in authentic learning by leveraging technology for problem solving, discovery and exploratory learning situated in a real-world context. In this course, educators will identify, explore and evaluate new and emerging technologies and their potential impact on instructional practices in integrated/interdisciplinary STEM education. Theories underlining these technological advancements and their implications for effective implementation are discussed.

EDUC-544—Project Based Learning and Interdisciplinary Teaching

Three Credit Hours

This course will enable students to learn how to use a Standards-Focused Project Based Learning (PBL) Model to develop specialized instructional curriculum to be implemented and integrated into an existing interdisciplinary educational system. Interactive and practical assignments are used to help teach the five major planning elements of PBL. Online discussions and interactive learning modules will be focused on the learning and application of PBL concepts. Furthermore, coursework is designed to help the student create a Project Based Learning curriculum for use in their teaching. For students enrolled in the STEM degree program, the curriculum developed in this class will be used as a component in their Capstone Project.

EDUC-545—Developing STEM Disciplinary Literacy Skills

Three Credit Hours

The purpose of this course is to enable those in the educational field to customize literacy practices to meet the unique demands of science, technology, engineering, and mathematics. Each content area demands specialized literacy skills. Therefore, in order to prepare students for literacy demands in careers and later in life, it is essential that literacy learning be embedded within the content knowledge. Educators will learn to assist K-12 students with the navigation of complex informational texts within STEM areas and be better prepared to help all students develop the necessary disciplinary literacy skills.

EDUC-546—Leadership and Critical Issues in STEM Education

Three Credit Hours

This course is designed to help candidates consider critical issues linked to successful leadership models in the integration of Science, Technology, Engineering and Mathematics (STEM) into educational endeavors. The on-line instructional approach for this course includes web-quest activities, asynchronous discussions, field experience interviews, and curriculum development activities as well as implementation reflective activities.

EDUC-547—Research and Statistics for STEM Applications

Three Credit Hours

This is a three (3) unit graduate course for teachers in STEM education with no previous background in statistics who will need

statistics in their further studies and their work. The focus is on understanding the use of research and statistical methods in various areas of science and engineering. Topics to be covered include research methods, measures of central tendency and variability, correlation, statistical inference, and basic design of experiments with examples and applications in science and engineering. Teachers will become critical consumers of research products and learn the basic skills of planning, designing, and executing and reporting research as well as evaluating and applying published research findings. Emphasis will concentrate on planning, developing, and producing a quality STEM research e-portfolio.

EDUC-548—Multidisciplinary Experimental Design and Implementation-Special Topics

Three Credit Hours

In this course, students will learn methods of collaborative interdisciplinary experimental design in the STEM fields. The course is designed to provide students with the experience, tools, and methods needed to improve experimental design processes and strategies for implementation in their classrooms. This course, using relevant STEM content, provides case studies in multidisciplinary experiments emphasizing problem solving and experimental design.

EDUC-549—Applied Measurement Techniques

Three Credit Hours

Students will examine and utilize tests and other evaluation techniques in counseling, in educational planning, in curriculum assessment, and in school-wide testing programs. Controversial issues in measurement will be appraised in the context of basic principles and actual use.

EDUC-550—Career Counseling and Development

Three Credit Hours

Students will learn foundational career development theories, the usefulness of career inventories, and the current trends in career counseling for adults and school-age children. In addition, students will practice and demonstrate competency in career counseling.

Prerequisite: EDUC-549 and EDUC-551

EDUC-551—Counseling Theories and Practice

Three Credit Hours

Overview of selected approaches to counseling theory and practice.

Prerequisite: EDUC-515

EDUC-552—Group Counseling

Three Credit Hours

Overview of selected approaches to group guidance and counseling theory and practice.

Prerequisite: EDUC-515 or EDUC-537 and EDUC-551

EDUC-561—Counseling Diverse Populations

Three Credit Hours

Designed to provide an overview of human behavior including diversity and cultural pluralism. Multicultural theories and models of counseling and consulting are presented and examined.

EDUC-562—Legal & Ethical Leadership Issues in Education

Three Credit Hours

This course examines goals and objectives of professional organizations, codes of ethics, legal considerations, standards of preparation, certification, licensing, role identity of counselors and

other personnel services specialists, and fee structures, and the impact of fees on the counseling relationship.

EDUC-567—Assessment of Abnormal Behavior

Three Credit Hours

This course is a 3-hour, transcript course in abnormal behavior and psychopathology of children, adolescents, and adults. The course will focus on the etiology and morbidity of differing mental disorders. Students will be introduced to the science and art of clinical assessment as a foundation for the actual practice of assessment in school and community mental health settings. Students will receive practical training in the process of clinical assessment as associated with the specific disorders, which will be focused on the use of assessment techniques in a professionally and ethically responsible manner. The informal and formal diagnostics taught in the course will complement DSM-V-TR courses.

EDUC-568—DSM-V-TR

Three Credit Hours

The purpose of this course is to provide master's degree students with a basic introduction to the Diagnostic and Statistical Manual of Mental Disorders in relation to the psychology of deviant, or abnormal, behavior. This course will explore the subject on a number of different levels. Knowledge will be gained through: (a) an understanding of the history and theories in the field through lecture, readings, the internet, group discussions, and research; (b) an understanding of diagnoses in the DSM-IV-TR; and (c) the application of this knowledge through exercises, assignments, class participation, and videotaped role-plays.

EDUC-570—Developing Literacy Skills with At Risk

Readers

Three Credit Hours

A survey of the nature, problems, and learning needs of at-risk readers, the course provides participants with information and techniques necessary for appropriate instructional decisions and actions.

EDUC-585—Independent Research

Three Credit Hours

A supervised research project in an area related to the student's major would be completed. A formal presentation to a panel of three faculties who evaluate the project will be required. With the approval of major advisor and graduate dean, this course may be repeated once for additional credit.

Prerequisite: Permission of the instructor and submission of a research prospectus.

EDUC-587—Methods and Materials of Teaching Social Studies

Three Credit Hours

This course is a study of the aims and methods as well as materials employed in middle and high schools; organization of subject matter; motivation and direction of learning; development of attitudes, appreciations, and ideas; classroom presentation of formal materials; conducting informal activities; provision for individual difference; measurement of educational outcomes; and enhancement of personal and professional growth. The focus of the course is the application of the learner-centered conceptual base in the process of teaching their discipline specialty – the Social Studies.

EDUC-588—Foundations of Literacy

Three Credit Hours

A foundational course designed to focus on developing literacy skills. The developmental process of literacy growth along with techniques for teaching phonemic awareness, word recognition, vocabulary, and comprehension skills will be explored.

EDUC-589—Methods and Materials for Developing Literacy Skills

Three Credit Hours

Specific methods of literacy instruction will be studied and demonstrated along with analysis and evaluation of a wide variety of materials used in literacy instruction.

EDUC-590—Literacy Assessment and Instruction

Three Credit Hours

A course examining and providing practice with formal and informal assessments used to target children's literacy strengths and identify areas needing improvement. Participants will assess one child and plan corrective instruction based on the assessment results.

Prerequisite: EDUC-588 or EDUC-589

EDUC-591—Practicum in Literacy Education

Three Credit Hours

A field-based course in which each candidate engages in the supervised teaching of an individual student. Candidates synthesize the knowledge they have gained in the program to demonstrate ability to appropriately assess and instruct a student at that student's level of literacy instruction. A case study approach is used.

Prerequisite: EDUC-590

EDUC-592—Content Area Reading and Writing

Three Credit Hour

A course that examines disciplinary and academic literacies. The primary goal of the course is to deepen candidates' knowledge of the reading and writing processes in order to enable them to effectively design and implement literacy instruction across content areas.

EDUC-594—Internship in Literacy Education

Three Credit Hours

A field-based course in which each candidate engages in supervised action research. Candidates collect and analyze data and then disseminate findings to school-based audiences.

Prerequisites: EDUC 591 and a satisfactory score on Praxis II must be on file. Also, applicants must have a cleared background check on file with the S.C. Department of Education.

EDUC-597—Supervision of Student Teachers

Three Credit Hours

A course in supervision for master teachers, department heads, and college teachers with supervisory responsibilities in teacher education.

EDUC-598—Curriculum Project

Three Credit Hours

Coursework is designed as a capstone to the program in Curriculum and Instruction. The student will be required to develop a curriculum project ultimately to be implemented in the student's classroom or school. This written project will require a review of existing literature and a presentation of the results to peers and professor.

Prerequisite: EDUC 531 or EDUC 532

EDUC-600—Professional Negotiations

Three Credit Hours

Coursework emphasizes knowledge and improvement in the various education associations. The student will become acquainted with forces and trends influencing collective negotiations; principles, concepts, and theory relevant to negotiations; negotiation skills; and relevant literature and research.

EDUC-601—Principles of School Law

Three Credit Hours

Coursework includes constitutional, statutory, case, and common law bases of school administration and the study of legal provisions and principles relating to education with an emphasis on research and analysis.

EDUC-602—Staff Personnel Administration

Three Credit Hours

Coursework includes the study of personnel policies and practices as they relate to recruitment, selection, orientation, employment, promotion, evaluation, in-service development, dismissal, retirement, and teacher-administrator relationships.

EDUC-603—School Plant Seminar

Three Credit Hours

Coursework includes the study of problems and policies of the school plant, such as population studies, educational planning, school building standards, materials and uses, rating, and public relations. Discussion of innovative plans and construction as well as visits to new schools will be made.

EDUC-605—Independent Study

Three Credit Hours

This course will offer students an opportunity to acquire deeper knowledge of thought and practice in the major field of emphasis. Each student must develop a plan of independent study at the outset and file the completed study at the end of the semester

Prerequisite: Permission of instructor and Dean of School of Education.

EDUC-606—The Superintendency and School Organization

Three Credit Hours

Coursework emphasizes the principles of central school administration and the structural organization of public education and the responsibilities and authority of school boards, superintendents, and principals and the relationships between them.

EDUC-608—Literature for Children and Adolescents

Three Credit Hours

A survey of literature for children. Appreciation and enjoyment of noteworthy books including award winners and multicultural literature will be the focus of instruction. The ability to effectively use a variety of texts with children throughout the school program will be emphasized.

EDUC-610—Seminar on School Improvement

Three Credit Hours

Coursework includes the process of designing, implementing, and evaluating a school climate improvement program which includes

mutual efforts by staff and students to formulate and attain school goals. Emphasis will be placed on effective school research.

EDUC-611—Staff Development and Evaluation

Three Credit Hours

This course focuses on designing staff development and evaluation systems to enhance effectiveness of school personnel.

EDUC-612—Seminar in School Law

Three Credit Hours

Coursework provides updates on legal issues and decisions related to teaching and the administration of public schools including current laws and regulations pertaining to public schools in South Carolina.

Prerequisite: EDUC-601

EDUC-613—Foundations of American Higher Education

Three Credit Hours

This course provides an introduction to the historical, political, sociological, and philosophical foundations of higher education. Emphasis is on the complex relationship between society and higher education. Issues regarding race, class, gender and culture within the educational system are addressed in the context of fostering educational opportunity and ameliorating inequalities. A historical context also is established which allows for critical examination of events, individuals, and ideas that have influenced the development of higher education in the United States. Through an integration of knowledge in the foundations of education, the course prepares reflective decision makers who can critically examine various schools of philosophical thought and political issues related to higher education.

EDUC-614—Seminar in Educational Administration

Three Credit Hours

Coursework explores various theories and their impact on administration and the organization. Emphasis will be placed on behavioral science theories drawn from historical, philosophical, and sociological works applied to the administrative process.

EDUC-616—Political Process of Public Education

Three Credit Hours

Coursework includes the study of the process by which education public policy decisions are made, authority and responsibility, power and influence, public policy, methods of determining power structure, superintendency, and roles and tasks that includes attention to school community relations.

EDUC-619—Assessment of School Programs

Three Credit Hours

Coursework provides theoretical and applied analysis of the procedures and techniques involved in designing and implementing evaluation and assessment studies of total school programs. Attention will be given to accreditation procedures, minimum standards, legislative requirements, as well as the assessment of instructional outcomes

EDUC-620—Systems Planning and Management for Education

Three Credit Hours

This course is designed to apply systems theory to real educational situations. Setting and implementing goals and objectives, using various management techniques and tools, and then applying general

management principles and practices constitute the instructional content.

EDUC-622—Critical Multicultural Issues in Higher Education

Three Credit Hours

A study of contemporary issues/trends internal and external to work within higher education system, focusing on the status, programming needs, and legal and ethical concerns of racial minorities, persons with disabilities, different lifestyle orientations, and adult learners on college/university campuses.

EDUC-624—Basic Counseling Skills

Three Credit Hours

Systematic development of basic counseling skills essential to enter the counseling profession.

Prerequisite: EDUC-551 and/or faculty advisor approval.

EDUC-629—Practicum in School Counseling

Three Credit Hours

Supervised counseling experience in which student serves as counselor in school setting for a minimum of 100 clock hours.

Prerequisites: EDUC-624

EDUC-632, 633—Internship: School Superintendency

Three Credit Hours

Coursework provides supervised field studies and experiences in central office administration.

Prerequisite: Passing PRAXISII score results on file at The Citadel and permission of advisor.

EDUC-634—Practicum in Student Affairs and College Counseling

Three Credit Hours

Supervised counseling experience in which the student serves as a college counselor in a school setting for a minimum of 100 clock hours.

Prerequisite: EDUC-624

EDUC-642—Coaching in Literacy Education

Three Credit Hours

This course introduces students to the role of literacy coaching (K-12). Students learn to provide support for teachers and the school community as a whole. As part of this class, students will create a professional development presentation and lead a teacher inquiry group on a topic related to literacy. This course will include topics related to modeling instruction, observing and providing feedback, and creating a literacy plan for a classroom or school.

EDUC-643—Action Research in Literacy Coaching

Three Credit Hours

In this course, students learn to improve literacy coaching through action research. Participants identify an issue or problem related to literacy instruction, propose a research plan, collect and analyze data, and interpret and present the results in written and oral formats. Through their own teacher research, participants are able to influence classroom practice and improve the literacy instruction in schools.

EDUC-650—Elementary School Counseling Internship I

Three Credit Hours

Supervised field experience of 300 clock hours in which student serves as counselor in school setting.

Prerequisite: EDUC-629 & permission of Advisor.

EDUC-651—Secondary Counseling Internship I

Three Credit Hours

Supervised field experience of 300 clock hours in which student serves as counselor in school setting.

Prerequisite: EDUC-629 & permission of Advisor.

EDUC-652—Elementary School Counseling Internship II

Three Credit Hours

Prerequisite: EDUC-650 and permission from advisor. May be taken concurrently with EDUC-650.

EDUC-653—Secondary School Counseling Internship II

Three Credit Hours

Prerequisite: EDUC-651 and permission from advisor. May be taken concurrently with EDUC-651.

EDUC-655—Internship I in Student Affairs and College Counseling

Three Credit Hours

This supervised experience includes the student serving as a student affairs specialist in a higher education institutional setting for a minimum of 300 clock hours.

Prerequisite: Permission from a faculty advisor.

EDUC-656—Internship II in Student Affairs and College Counseling

Three Credit Hours

This supervised experience includes the student serving as a student affairs specialist in a higher education institutional setting for a minimum of 300 clock hours.

Prerequisite: Permission from a faculty advisor.

EDUC-661—Internship in Elementary Administration I (fall/spring/summer)

Three Credit Hours

Coursework includes supervised field studies and experiences in elementary school administration.

Prerequisites: Passing PRAXIS II score results on file at the Citadel Graduate College and permission of advisor.

EDUC-662—Internship in Elementary Administration II (fall, spring, summer)

Three Credit Hours

Coursework includes supervised field studies and experiences in elementary administration.

Prerequisite: Successful completion of EDUC 661 and permission of advisor.

EDUC-663—Internship Middle and High Administration I (fall, spring, summer)

Three Credit Hours

Coursework includes supervised field studies and experiences in secondary school administration.

Prerequisites: Passing PRAXIS II score results on file at the Citadel Graduate College and permission of advisor.

EDUC-664—Internship in Middle and High Administration II (fall, spring, summer)

Three Credit Hours

Coursework includes supervised field studies and experiences in secondary school administration.

Prerequisites: Successful completion of EDUC-663 and permission of advisor.

EDUC-670—Foundations in STEM I

Two Credit Hours

The Foundations in STEM I course refreshes student knowledge in the STEM disciplines. Topics such as foundational concepts and applications of science, technology, engineering and math are explored. These courses will provide students with a solid background to enhance student confidence in STEM. Courses will utilize current events, case studies, and relevant readings to provide content knowledge and to highlight the interdisciplinary nature of the STEM disciplines.

EDUC-680—Foundations in STEM II

Two Credit Hours

The Foundations in STEM II course is a follow up to the first course and has students continue exploration of the foundational concepts and applications of science, technology, engineering and math.

Electrical Engineering (ELEC)

ELEC-605—Advanced Power Systems

Three credit hours

A review of AC systems, power flow and symmetrical faults will be given. Students will study symmetrical components, unsymmetrical faults, system protection, power system controls, and power line transients. Additional topics will include power flow computational methods, regulatory aspects of the North American power grid, and the use of computer tools for the design of transmission and distribution systems.

Prerequisites: Graduate status or permission from instructor, and an undergraduate course in power system analysis or equivalent.

ELEC-615—Spectral Analysis

Three credit hours

Spectral estimation and analysis plays a key role in a large variety of signal processing applications. Classical and modern spectral analysis techniques are developed and compared in terms of performance and implementation. Topics covered include random-discrete signals, sample autocorrelations functions, the periodogram, and parametric spectral estimates.

Prerequisites: Graduate status or permission from instructor, and an undergraduate course(s) in continuous and discrete time signal analysis or equivalent.

ELEC-625—RF Systems

Three credit hours

Analysis, design, and optimization of radio-frequency systems. The operation and characterization of RF components, fundamentals of noise and distortion, and system concepts including tools such as level charts and link budgets will be taught. Applications will include wireless communication systems and radar.

Prerequisites: Graduate status or permission from instructor, and undergraduate courses in linear systems and electromagnetic fields.

ELEC-635—Advanced Signal Processing

Three credit hours

An introduction to the analysis and design of adaptive systems with applications in the areas of communications, signal processing, and control. Topics include random signal models; theory of adaptation and performance measures; LMS and RLS algorithms; optimal filtering; adaptive equalization; interference cancellation; signal prediction; and system identification.

Prerequisites: Graduate status or permission from instructor, and undergraduate courses in signals and systems, and probability and statistics for engineers.

ELEC-645—Data Communication Networks

Three credit hours

Fundamentals of data communication networks. Emphasis on network algorithms and their performance. Topics include: layered network architecture, Link Layer protocols, high-speed packet switching, queuing theory, Local Area Networks, and Wide Area Networking issues, including routing and flow control.

Prerequisites: Graduate status or permission from instructor, and undergraduate courses in computer programming and probability and statistics for engineers.

ELEC-655—Digital Communications

Three credit hours

Introduction to modern digital communication systems. Emphasis on modulation and detection techniques and their performance in the presence of noise.

Prerequisites: Graduate status or permission from instructor, and undergraduate courses in linear systems and probability and statistics for engineers.

ELEC-650—Special Topics in Electrical Engineering

Three credit hours

Special topics in electrical engineering will be offered to graduate students occasionally when the interest of the students and the availability of an instructor dictate. The syllabus must be approved by the electrical engineering faculty. Since the content of the course may change, a student may repeat this course for credit with the permission of the department head.

Prerequisite: Graduate status and consent of instructor.

ELEC-665—Advanced Energy System Engineering

Three credit hours

This course covers fundamentals of thermodynamics, chemistry, flow and transport processes as applied to energy systems. Topics include analysis of energy conversion in thermomechanical, thermochemical, electrochemical, and photoelectric processes in existing and future power and transportation systems, with emphasis on efficiency, environmental impact and performance. Systems utilizing fossil fuels, hydrogen, nuclear and renewable resources, over a range of sizes and scales are discussed. Applications include fuel reforming, hydrogen and synthetic fuel production, fuel cells and batteries, combustion, hybrids, catalysis, supercritical and combined cycles, photovoltaics, etc. The course also deals with different forms of energy storage and transmission, and optimal source utilization and fuel-life cycle analysis.

Prerequisites: Graduate status or permission from instructor and undergraduate courses in university physics and engineering mathematics.

ELEC-675—Computer Architecture

Three credit hours

Organization and design of computer systems hardware. Provides the basic knowledge required for understanding and designing standard and advanced computer architectures. Topics include: instruction set architectures, ALU design and computer arithmetic, memory organization, cache and virtual memories, controller design, pipelining and parallelism.

Prerequisites: Graduate status or permission of the instructor, and undergraduate courses in digital logic design and assembly language programming.

ELEC-685—Digital Control Systems

Three credit hours

This course provides an introduction to the design of control systems in the digital domain. Key topics will include D/A and A/D conversion, the Z-transform, state variable techniques, stability, controllability, and observability. Modern controller design techniques including pole placement design by state feedback will be considered.

Prerequisites: Graduate status or permission of the instructor, and undergraduate course in feedback control systems.

English (ENGL)

ENGL-500—Old and Middle English Literature

Three Credit Hours

A study of *Beowulf*, other Old English poems, and Old English prose in translation; includes such Middle English works as *Sir Gawain and the Green Knight*, *Pearl*, *Piers Plowman*, the *Ancrene Riwe*, *The Owl and the Nightingale*, and other romances, lyrics, and drama. (Chaucer is excluded.)

ENGL-501—Chaucer

Three Credit Hours

A study of Chaucer's language, art, and cultural milieu through the reading of *Troilus and Criseyde*, the *Canterbury Tales*, and many of the shorter works.

ENGL-502—Shakespeare

Three Credit Hours

A comprehensive study of Shakespeare's art, including an intensive reading of several plays and appropriate attention to the primary critical approaches.

ENGL-504—Poetry and Prose of the English Renaissance

Three Credit Hours

Non-dramatic poetry and prose of the sixteenth and early seventeenth centuries.

ENGL-505—Milton

Three Credit Hours

A study of the major poetry, selected prose, and selected minor poems with emphasis on *Paradise Lost*.

ENGL-506—Restoration and Eighteenth Century Drama

Three Credit Hours

A study of important dramatists of the period as Otway, Etherege, Wycherley, Dryden, Congreve, Vanbrugh, Farquhar, Goldsmith, and Sheridan.

ENGL-507—Poetry and Prose of the Restoration and Eighteenth Century

Three Credit Hours

A study of Dryden, Swift, Pope, Johnson, Blake, and other important poets and prose writers of the period.

ENGL-509—Romantic Literature

Three Credit Hours

A study of the chief features of the Romantic writings of the early nineteenth century, with special emphasis on Wordsworth, Coleridge, Byron, Shelley, and Keats.

ENGL-510—Victorian Literature

Three Credit Hours

A study of English literature from 1832 to 1900 in major writers such as Tennyson, Browning, Arnold, Carlyle, Swinburne, and Rossetti.

ENGL-511—Introduction to English Graduate Studies

Three Credit Hours

A practical introduction to research and writing. The course will cover theoretical approaches to literary and cultural interpretation; the discovery, analysis, evaluation, and integration of primary and secondary resources; and strategies for generating and revising sophisticated arguments. It also seeks to broaden awareness of career paths and professional development opportunities.

ENGL-512—Southern Literature

Three Credit Hours

A study of the best literature written in the South from the time of William Byrd to the present. The focus will be on the "Southern Renaissance," with special attention given to the Fugitive Poets and William Faulkner.

ENGL-517, 518—Special Topics in Literature

Three Credit Hours

A study of a special author, period, topic, or problem in literature which is outside the routine offerings of the department. The subject for each course will be announced.

ENGL-520—A Survey of World Literature I

Three Credit Hours

Masterpieces of world literature in translation from the Vedic literature to Racine with special attention to the philosophical content and the development of literary forms.

ENGL-521—A Survey of World Literature II

Three Credit Hours

Masterpieces of world literature in translation from Voltaire to the present time with special attention to the philosophical content and the development of literary forms.

ENGL-522—Colonial and Revolutionary American Literature

Three Credit Hours

A detailed study of major American writers from the earliest settlers through the end of the 18th century.

ENGL-523—Nineteenth-Century American Literature I—Romanticism

Three Credit Hours

A study of major figures of the American Romantic period (approximately 1830-1860), including Emerson, Thoreau, Poe, Hawthorne, and Melville.

ENGL-524—Nineteenth-Century American Literature II—Realism

Three Credit Hours

A study of major figures of the American Realistic period (approximately 1860-1900), including Whitman, Dickinson, James, Twain, and Crane.

ENGL-525—Eighteenth Century British Novel

Three Credit Hours

A study of the origins of the British novel, including such figures as Fielding, Richardson, and Defoe.

ENGL-526—Victorian Novel

Three Credit Hours

A study of major British novelists of the late nineteenth century, including Dickens, Eliot, and Hardy.

ENGL-527—British Fiction: 1900 to 1945

Three Credit Hours

A study of the novels and short stories of major British writers from the first half of 20th-century, including such figures as Conrad, Lawrence, Forster, Woolf, and Joyce.

ENGL-528—American Fiction: 1900 to 1945

Three Credit Hours

A study of the novels and short stories of major American writers from the first half of the twentieth century, including such figures as Fitzgerald, Wolfe, Faulkner, and Hemingway.

ENGL-529—American Fiction: 1945 to the Present

Three Credit Hours

A study of the significant American novels and short fiction published since World War II.

ENGL-531—British Poetry: 1900 to Present

Three Credit Hours

A study of the poetry of major twentieth-century British authors such as Auden, Yeats, Thomas, and Hardy.

ENGL-532—American Poetry: 1900 to Present

Three Credit Hours

A study of the poetry of major 20th-century American authors such as Eliot, Pound, Stevens, Williams, and Frost.

ENGL-533—British Drama: 1900 to Present

Three Credit Hours

A study of the work of major 20th-century British dramatists such as Shaw, Pinter, Stoppard, and Beckett.

ENGL-534—American Drama: 1900 to Present

Three Credit Hours

A study of the work of major twentieth-century American dramatists such as O'Neill, Williams, Miller, and Albee.

ENGL-535—African American Literature

Three Credit Hours

A study of African American literature from the early days of slavery, to the struggle for emancipation, to the twentieth-century Harlem Renaissance and civil rights movement. Readings will cover poetry, fiction, and drama, as well as autobiographies and cultural commentaries.

ENGL-537—Contemporary British Fiction

Three Credit Hours

A study of the novels and short stories of major contemporary British writers.

ENGL-550, 551—Special Topics in Composition or Language

One to Three Credit Hours

A study of a special author, period, topic, or problem in composition or language which is outside the routine offerings of the department. The subject for each course will be announced.

ENGL-552—Adolescent Literature

Three Credit Hours

A study of literature for the adolescent, including methods of introducing the major literary genres to the secondary school student. *Note: For students in the M.A.T in English program only.*

ENGL-553—Modern English Grammar

Three Credit Hours

An intensive study of the syntax of present day English. The course also includes a review of traditional grammar, focusing primarily on the parts of speech. Special attention is given to linguistic theory, particularly regarding the acquisition of language.

ENGL-554—History of the English Language

Three Credit Hours

A historical survey of the syntactic and phonological features of Old, Middle, Early Modern, and present day English.

ENGL-555—Literary Criticism

Three Credit Hours

A study of the major literary theories from ancient Greece to the present and practical application of the theories to particular works of literature. Special attention is given to semiotic theory as it relates to the influence of language and visual images on thinking, composing, and action.

ENGL-556—Theory and Practice of Teaching Composition

Three Credit Hours

A study of traditional and contemporary theories of the composition process and applications of those theories to teaching composition.

ENGL-558—Technical and Professional Writing

Three Credit Hours

Principles and practice of technical communication as applied to reports, technical papers, oral presentations, and business communications.

ENGL-559—History and Theory of Rhetoric

Three Credit Hours

A study of language as a means of winning the assent, sympathy, or cooperation of an audience. Includes contemporary rhetorical theory and its development from classical rhetoric.

ENGL-560—Film Studies

Three Credit Hours

This film course will expose students to films from a variety of nations and filmmakers that represent the chief cinematic movements of the twentieth century (Weimar Expressionism, French New Wave, American Noir, etc.), and it will instruct students in the terminology and techniques of filmmaking. The students will, by studying the relationship between the tools of filmmaking and the finished products, learn to “read” films as metaphors of reality.

ENGL-562—Workshop in Advanced Composition

Three Credit Hours

The study, discussion, and practice of advanced composition techniques; including the use of computer technology for print documents, audio-visual presentations, and web applications.

ENGL-564—Teaching with Technology

Three Credit Hours

Focuses on a wide range of web-based resources that future teachers can use to improve their students’ writing, enrich their understanding of literature, and get them excited about learning. This course provides interactive instruction designed to make work in and out of the classroom more meaningful for students. It also demonstrates how to incorporate applications that students use on a daily basis. Over the course of the semester, MAT candidates will develop web-based projects that they can incorporate in their future courses.

ENGL-573—Special Topics in African American Literature

Three Credit Hours

A study of a specific topic in African American literature that is not a genre, period, or individual writer. Topics will vary according to instructor.

ENGL-574—Special topics in English Literature Before 1800

Three Credit Hours

A study of a specific topic in English Literature Before 1800. Topic will vary according to instructor. This course fulfills the period requirement for English Literature before 1800.

ENGL-575—Special topics in English Literature After 1800

Three Credit Hours

A study of a specific topic in English Literature After 1800. Topic will vary according to instructor. This course fulfills the period requirement for English Literature after 1800.

ENGL-576—Special topics in American Literature

Three Credit Hours

A study of a specific topic in American Literature. Topic will vary according to instructor. This course fulfills the period requirement for American Literature.

ENGL-595—Methods and Materials for English Language Arts

Three Credit Hours

This course exposes students to theories and practices of teaching English (to include reading, writing, speaking, listening, viewing and thinking) in grades 9-12, including preparation for reflective practice and classroom-based teacher research. In-class instruction is augmented by field experiences that expose students to the professionalism of practicing ELA teachers and the realities of working with a diverse population of students. This course is intended to prepare candidates for a teaching internship.

Prerequisites: EDUC-501 and EDUC-592.

Note: For students in the M.A.T. in English program only.

ENGL-698—Tutorial

Three Credit Hours

Individual study of a given topic following a syllabus of readings, papers, and other assignments prescribed by a faculty member serving as director.

ENGL-699—Independent Study

Three Credit Hours

Individual study of an agreed-upon topic under the direction of a faculty member but following a course of reading and other requirements proposed by the student and established by negotiation with the director.

ENGL-700—Seminar

Three Credit Hours

Individual research into a scholarly or critical problem in literature, composition, or language. Progress, methods, and results will be shared with the class by presentation and discussion will lead to the preparation of a single long paper.

ENGL-701—Thesis

Six Credit Hours

Completion of a formal master’s thesis under faculty direction.

ENGL-703—Seminar in English Literature Before 1800

Three Credit Hours

Study of a scholarly or critical issue in literature, composition, or language. Typically, class presentations and seminar/discussion format are required with a single long paper as the culminating student project. This course fulfills the period requirement for English Literature before 1800 as well as the seminar requirement.

ENGL-704—Seminar in English Literature After 1800

Three Credit Hours

Study of a scholarly or critical issue in literature. Typically, class presentations and seminar/discussion format are required with a single long paper as the culminating student project. This course fulfills the period requirement for English Literature after 1800 as well as the seminar requirement.

ENGL-705—Seminar in American Literature

Three Credit Hours

Study of a scholarly or critical issue in literature, composition, or language. Typically, class presentations and seminar/discussion format are required with a single long paper as the culminating student project. This course fulfills the period requirement for American Literature as well as the seminar requirement.

Health & Human Performance (HESS)

HESS-501—Nutrition

Three Credit Hours

A study of primary nutrients essential to health with attention given to specific needs from infancy through adulthood. Current theories and practices related to physical and intellectual performance are also investigated. Contemporary topics are presented such as degenerative diseases, food-borne diseases, fad dieting, food additives, and sports nutrition.

HESS-502—Drug & Substance Abuse

Three Credit Hours

A study of characteristics of commonly abused chemicals and other substances and reasons for abuse. Attention will be given to methods of rehabilitation and prevention.

HESS-503—Human Sexuality

Three Credit Hours

A study of all facets of human sexuality.

HESS-504—Public Health

Three Credit Hours

A course designed to analyze public health trends, services, funding, and organization of local, state, and federal agencies.

HESS-505—Motor Development & Motor Learning

Three Credit Hours

Study of appropriate learning theories, hereditary and environmental factors influencing learning and performance of gross motor skills.

HESS-506—Applied Physiology of Exercise

Three Credit Hours

Study of effects of exercise upon various components of physical fitness. Analysis and interpretation of research in areas of cardiovascular-pulmonary adjustment, metabolic requirement, and heat regulation during exercise are emphasized.

HESS-507—Special Problems in Health Science, Exercise Science, & Sport Science

Three Credit Hours

An independent research study of a local problem or a specialized subject area not normally covered in existing courses.

Prerequisite: HESS-540 Research Techniques & Methods of Analyzing Research in Health, Exercise, & Sport Science I.

HESS-508—Epidemiology

Three Credit Hours

An introduction to the science of epidemiology and techniques used in epidemiology.

Prerequisite: Tests & Measurements, Statistics, or equivalent.

HESS-509—Preventative & Rehabilitative Aspects of Physical Activity

Three Credit Hours

This course provides emphasis on roles of exercise and physical activity in prevention and rehabilitation of degenerative diseases.

HESS-510—Biomechanics of Sports Techniques

Three Credit Hours

Study and analysis of humans in motion, sport object motion, and forces acting upon animate and inanimate bodies. Basic cinematographic and non-cinematographic techniques are utilized in a variety of both general and specific sports skill applications.

HESS-511—Special Topics in Health, Exercise, & Sport Science (Exercise Science)

Three Credit Hours

Opportunities for graduate students to take special courses not generally offered within the department. Each course must be appropriate for one's program of studies, and permission of the Director of Graduate Studies in Health, Exercise, and Sport Science is required.

Prerequisite: Varies according to topic.

HESS-512—Special Topics in Health, Exercise, & Sport Science (Sports Management)

Three Credit Hours

Opportunities for graduate students to take special courses not generally offered within the department. Each course must be appropriate for one's program of studies, and permission of the Director of Graduate Studies in Health, Exercise, and Sport Science is required.

Prerequisite: Varies according to topic.

HESS-513—Sport Facility & Event Management

Three Credit Hours

This course will integrate various operational functions of sport facilities, including management principles, methodologies, and practices. In addition, effective management of sport and recreational events will be studied.

HESS-518—Sport Marketing

Three Credit Hours

This course will cover basic components of sport marketing: use of sports as a marketing tool for other products; marketing of sports products; and current considerations relevant for both marketing through and marketing of sports.

HESS-520—Special Topics in Sport Management

Three Credit Hours

Opportunity for graduate students to take special courses not generally offered within the department. Each course must be appropriate for one's program of studies, and permission of the Director of Graduate Studies in Health, Exercise, & Sport Science is required.

HESS-521—The Art of Selling in Sport

Three Credit Hours

A course concentrating on knowledge, skills and concepts related to the "art" of sales, an area valued considerably in the sport industry.

HESS-523—Administration & Leadership of Exercise and Sport Organizations

Three Credit Hours

This course examines organizational theory and behavior as well as leadership qualities related to exercise and sport organizations. Effectiveness, structure, and design of sport and exercise

organizations will be addressed as well as cultures, leadership styles, conflicts, changes, and human resources involved in these entities.

HESS-525—Scientific Principles of Physical Education, Health, Exercise, & Sport Science

Three Credit Hours

This course introduces students to the study of effects of exercise, physical activity, and work on various physical fitness components, as well as analysis of the human body in motion, sports objects in motion, and forces acting upon animate and inanimate objects/bodies.

Prerequisite: A biology, chemistry, or physics course and two human anatomy and/or physiology courses.

HESS-527—Content & Methods of Teaching School Health Education & Health-Related Aspects of Physical Fitness

Three Credit Hours

This course updates content knowledge and prepares students in teaching styles, methodologies, and assessment techniques for health education curricula in K-12 schools.

Prerequisite: A health and wellness course or passing a departmental competency exam.

HESS-528—Content & Methods of Teaching Rhythmic Activities & Movement Education

Three Credit Hours

This course teaches content and prepares students in teaching methodologies for fundamental rhythmic activities and movement education in grades K-12, including basic locomotor skills, creative rhythmic activities, dances (traditional, folk, square, social, line), and aerobics. Additional emphasis is placed on candidate skill development in dance and basic gymnastics.

Prerequisite: HESS 550 or permission of the instructor.

HESS-529—Special Problems in Sport Management

Three Credit Hours

An independent research study of local, regional or national issue/subject of interest in Sport Management that is not normally covered in existing courses.

HESS-530—Practicum in Sport Management

Three Credit Hours

A supervised field experience of at least 125 hours in a sport industry setting. Students observe, shadow, and work in a setting that enhances and complements classroom learning, develops valuable skills, nurtures professional networking, and acts to advance one's future career goals. *Prerequisites:* Sport Marketing (HESS-518), Administration and Leadership of Exercise and Sport Organizations (HESS-523), or instructor approval.

HESS-533—Content & Methods of Teaching Elementary School Physical Education

Three Credit Hours

This course teaches content and theoretical and practical study of teaching progressively graded programs of activities for elementary school students, grades K-5.

Prerequisite: HESS 550 or permission of the instructor.

HESS-534—Accommodating Persons with Disabilities in Sport & Physical Activity

Three Credit Hours

Study of legal, ethical, and practical definitions of involving people with disabilities within physical activity, physical education, and sport settings.

HESS-535—History, Philosophy & Curriculum of Physical Education

Three Credit Hours

This course introduces students to the historical and philosophical roots of physical education and examines the degree to which these influence curricular models and decisions made by K-12 practitioners.

HESS-538—Internship in Sport Management

Six Credit Hours

Involvement in an external working experience with a host organization for a period of at least 500 hours. This internship will provide students with opportunities to receive practical experience in selected sport management settings.

Prerequisites: All required program courses or instructor approval.

HESS-539—Sport Public Relations & Promotions

Three Credit Hours

A course focusing on marketing and public relations principles and practices in the sport management industry.

HESS-540—Research Techniques & Methods of Analyzing Research in Health, Exercise, & Sport Science I

Three Credit Hours

A course designed to introduce procedures for conducting, evaluating, and applying research in health, exercise, and sport science including an understanding of fundamental research design, data collection, and data analysis.

HESS-541—Current & Future Trends in Health, Exercise, and Sport Science

Three Credit Hours

Investigation and exploration of current and future trends in health, exercise, and sport science through contemporary readings and seminar discussions.

HESS-542—Practicum in Health, Exercise, & Sport Science

Three Credit Hours

A supervised field experience of at least 125 hours in a health science, exercise science, or sport science setting. Students observe, shadow, and work in a setting (s) to enhance and complement classroom learning, develop valuable skills, nurture networking, and may advance one toward future career goals.

HESS-543—Consumer Health

Three Credit Hours

A course designed to produce smarter consumers in the health marketplace. Emphasis is on evaluation of health products and services.

HESS-544—Exercise Testing & Assessment

Three Credit Hours

A course designed to acquire knowledge and develop skills necessary for exercise testing, physical fitness assessment, and

exercise prescriptions among a variety of populations. Topics to be addressed include exercise program goals and objectives, principles and methods of physical fitness screening, development and testing, evaluation of existing exercise programs, exercise prescriptions, and administration and programming considerations.

HESS-545—Nutrition for Exercise, Sport, & Physical Activity

Three Credit Hours

An examination of nutrition and physical activity interactions including exercise and sport. Topics include current research on nutrients and ergogenic aids, as well as dietary analysis and intervention with athletes.

Prerequisites: HESS 501

HESS-546—Environmental Physiology

Three Credit Hours

A course examining energetics of environmental stress on cardiovascular, respiratory, metabolic, and muscle physiology as pertain to physical performance.

Prerequisites: HESS 506

HESS-547—Techniques of Conditioning for Sport & Physical Fitness

Three Credit Hours

A study of fundamental concepts of human physiology and exercise physiology as apply to programs of physical conditioning, training, and physical fitness. Theories, current research, and laboratory techniques for assessing human physiological responses to exercise, physical training, health-related physical fitness, and sport performance will be studied.

HESS-548—Psychology of Sport & Motivation

Three Credit Hours

A course addressing the effects of participating in exercise and sport on psychological traits and states of participants and fans. Cognitive and neurobiological mechanisms and psychological limitations to athletic performance will be studied, as well as mental and psychological techniques and strategies to improve performance and achievement in sport and exercise.

HESS-549—Sociological and Cultural Aspects of Sport

Three Credit Hours

An examination of sport in America and its effects on society, including race, gender, adherence, values, and violence.

HESS-550—Instructional Aspects of Physical Education

Three Credit Hours

This course is designed to discuss theories of instruction in physical education settings including environmental arrangements, task presentation, content development, and feedback. Practical applications of these principles to small peer group settings using open and closed motor skills will be included.

HESS-551—Content & Methods of Teaching Secondary Physical Education

Three Credit Hours

This course is designed to develop both the pedagogical skills of teacher candidates as well as content knowledge in teaching team and individual/dual sports. Emphasis is placed on planning, teaching,

and evaluating physical education lessons in secondary settings. Additional emphasis is placed on candidate skill development in team and individual/dual sports.

Prerequisite: HESS 550 or permission of the instructor.

HESS-552—Fundraising for Sport Organizations

Three Credit Hours

Traditional and innovative revenue acquisition methods for sport organizations will be examined. Fundamental concepts and theories of fundraising applicable to the sport industry will be studied.

HESS-553—Sport Communications

Three Credit Hours

Examination of the role of sport organizations as communications systems where effective written and oral interpersonal communication skills are imperative for success.

HESS-554—Analysis of Sports Skills & Techniques

Three Credit Hours

An application of data collection and data analysis tools including EMG, videography, and force transducers to kinesiological systems of the human body during movement and sport skills.

HESS-555—Legal Aspects of Sport

Three Credit Hours

This course reviews legal considerations, responsibilities, and liabilities of organizations and personnel related to sport and recreation. An examination of event management, personnel relations, and governmental regulations impacting sport and recreation as well as tort liability with special emphasis on effective management of risk, athletic eligibility, contracts, and Title IX.

HESS-556—Sport Finance

Three Credit Hours

This course addresses basic theory in finance and accounting as applied to managerial control of sport organizations. It examines forms of ownership, taxation, financial analysis, feasibility studies, and economic impact studies related to sport organizations.

HESS-557—Economics of Sport

Three Credit Hours

This course introduces students to fundamental economic concepts and analysis, especially those related to spectator sports, and youth sports, recreational sports, the sporting goods industry.

HESS-558—Advertising in Sport

Three Credit Hours

A course examining knowledge, skills and concepts required for successful advertising in the sport industry. Strategies and techniques of successful advertising will be studied.

HESS-559—Research in Sport Management

Three Credit Hours

A course designed to introduce procedures for conducting, evaluating, and applying research in the sport management domain, including an understanding of the utility of research, fundamental research design, data collection, and data analysis.

HESS-560—Research Techniques & Methods of Analyzing Research in Health, Exercise, & Sport Science II

Three Credit Hours

Advanced procedures for conducting, evaluating, and applying research in health, exercise, and sport science including an understanding of parametric and nonparametric instruments and methodologies used to measure and evaluate various parameters considered essential to research in health, exercise, and sport science.

Prerequisite: HESS-540 Research Techniques and Methods of Analyzing Research in Health, Exercise, & Sport Science I.

HESS-561—Advanced Measurement & Evaluation in Physical Education

Three Credit Hours

Analysis and interpretations of data associated with various cognitive, affective and psychomotor tests commonly used in physical education. Topics include test administration, test construction, performance-based assessments, rubrics, and physical fitness and skill testing.

HESS-620—Professional Internship in Teaching

Six Credit Hours

A requirement for teacher certification, observation, and teaching in approved schools under supervision by a college professor. Two placements are required: one in an elementary school setting and one in a secondary school setting. A field experience component of a minimum of 60 days is required.

Prerequisites: Please refer to program requirements.

HESS-598—Thesis I in Health Science, Exercise Science, & Sport Science

Three Credit Hours

Student will be directed to develop a research question or problem statement, define terminology, identify limitations and delimitations, and formulate hypotheses and purpose statements. A literature review critiquing previous research on the topic and a description of methodology to be used to solve the problem will be included. Chapters 1, 2, and 3 of the thesis will be completed and presented to the thesis committee for approval.

HESS-599—Thesis II in Health Science, Exercise Science, & Sport Science

Three Credit Hours

Student will be directed to report results, discuss findings in relation to the introduction and previous literature, identify recommendations and conclusions, and include a bibliography. Chapters 4 and 5 of the thesis will be completed, and the entire thesis presented in an oral defense to the thesis committee for approval. The student will also be expected to submit the research for presentation at a state, regional, or national meeting or equivalent.

History (HIST)

HIST-502—Colonial America and the American Revolution to 1789

Three Credit Hours

The motives of colonization; the evolution of self-government; the extension of the frontier; economic, social, and religious life; imperial rivalries; the causes of the Revolution; the War for American Independence; problems of the Confederation; and the establishment of the Federal Union.

HIST-504—Civil War and Reconstruction

Three Credit Hours

The political, economic, diplomatic, and military history of the United States, 1850-1877, emphasizing the forces that tend to bind or disrupt the Union and including a detailed account of the war and its consequences.

HIST-506—The U.S. in the Twentieth Century

Three Credit Hours

A study of the efforts to fulfill the democratic vision in the era of wars and depressions, accelerating technological innovation, material progress, and cultural change.

HIST-521—The American South

Three Credit Hours

The political, social, and economic development of the South from the 1820s to the present with an emphasis on the region within the national context as one of both change and continuity.

HIST-522—South Carolina History

Three Credit Hours

A survey of the political, economic, social, and intellectual development of South Carolina from its discovery to the present, with emphasis on the relation of the state to the South and to the nation.

HIST-523—Afro-American History

Three Credit Hours

An introduction to the history of black Americans in the United States, with emphasis on the social forces underlying transition from West Africa to the New World, from slavery to freedom, and from rural to urban life. Topics to be discussed include the Atlantic slave trade, American slave societies, maroon communities, free blacks in the antebellum United States, Reconstruction and free labor, colonization, emigration, and urban migration.

HIST-525—Introduction to Public History

Three Credit Hours

This course is designed to explore the history, theory, and current issues of public history practice in the United States. Public history is about recognizing the public as history makers and “doing” history for a public audience. As such, public history can take numerous forms-including, but not limited to, oral history, folklore, museum curating, historical preservation, cultural conservation, and community activism. As an interdisciplinary field, public history incorporates methodologies from such disciplines as history, art history, architectural history, archeology, anthropology, folklore, and cultural geography. This course will therefore provide an introduction to different forms of public history, particularly by examining the theoretical underpinnings and methodologies that have shaped each one.

HIST-532—Ancient Greece

Three Credit Hours

Greek civilization from its beginning to Alexander the Great. Emphasis on political, economic, social, and intellectual movements.

HIST-533—Ancient Rome

Three Credit Hours

Roman history from its beginning until the Age of Constantine. Emphasis on political and social developments in the Republic and the early empire.

HIST-535—Medieval Europe

Three Credit Hours

European social, political, economic, and religious institutions and cultural and intellectual phenomena in the light of the changing historical environment from the end of the Ancient World to the Renaissance.

HIST-537—Renaissance and Reformation

Three Credit Hours

The Renaissance as a European-wide movement emanating from the Italian peninsula; the crisis of the church medieval and the rise of the Renaissance papacy; Humanism, with special emphasis on the great painters, architects, and sculptors such as Giotto, Brunelleschi, Donatello, Botticelli, da Vinci, Raphael, and Michelangelo; the Renaissance city-states, Machiavelli, and the Renaissance monarchies of France, England, Spain, and the Holy Roman Empire; the continuing crisis of the church medieval and the religious upheavals of Protestantism; the work of Luther, Calvin, Zwingli, and the Anabaptists; the Catholic Reformation.

HIST-541—Enlightenment and French Revolution

Three Credit Hours

The major social, political, and cultural changes in Europe from the death of Louis XIV to the fall of Napoleon. Topics include the intellectual history of the Enlightenment; the causes of the Revolution; the development of radical ideologies; social and political instability; the French impact on Europe; and the achievements of Napoleon as civil administrator, military strategist, and commander.

HIST-542—Nineteenth-Century Europe

Three Credit Hours

Europe from Waterloo to Sarajevo; political reaction and reform; the Industrial Revolution with its economic, social, and political effects; nationalism and the renewed interest in imperialism; other factors in international rivalries and the coming of World War I.

HIST-543—Twentieth-Century Europe

Three Credit Hours

An examination of the origins and consequences of two World Wars on the major European states; the political, social, and economic development of those states and their relative positions today.

HIST-545—History of Modern Russia

Three Credit Hours

History of the development of Tsarist absolutism under the Romanov dynasty and of the religious, social, and economic institutions of the Tsarist state. Intensive treatment of the 1917 Revolution; the rise and fall of the Soviet empire.

HIST-551—Women in the Western World

Three Credit Hours

An examination of the ideas, institutions, and events in Western Civilization which specifically affected women. Lectures and readings will be organized topically rather than geographically or

chronologically. Areas to be examined include religion, education, sex and marriage, the family, work, feminist and suffragist movements.

HIST-560—History of the Non-Western World

Three Credit Hours

This course introduces the histories of East Asia, Meso-America, the Middle East, South Asia, and Sub-Saharan Africa. It examines the development of each area's political, social, and cultural traditions and institutions. Close attention is devoted to social values, religious beliefs, and cultural practices. Particular emphasis is given to how contact with the West irrevocably altered each region. (This course does not count towards the requirements for the MA in History.)

HIST-562—Colonial Latin America

Three Credit Hours

A survey of Spanish and Portuguese colonial America to 1825. Topics include native populations on the eve of conquest; exploration and conquest by Europeans; the development of multiracial societies; the colonial economies; the institutions of Ibero-American empires; the social, economic, and intellectual roots of revolution; independence movements.

HIST-563—Modern Latin America

Three Credit Hours

A survey of Spanish and Portuguese America since the wars for independence. Topics include the aftermath of the independence movements, incorporation into the international economy, changing social organization, race relations, the search for political stability, the role of the military, 20th century revolutionary movements, intellectual currents.

HIST-572—Precolonial Africa

Three Credit Hours

An introduction to the precolonial history of sub-Saharan Africa. Special attention will be focused on the growth of Islam in West Africa, the East African city-states and kingdoms, and the upheaval in nineteenth-century southern Africa. African slavery and the slave-trade will also be considered.

HIST-573—Modern Africa

Three Credit Hours

A history of the development of Africa during the modern period, including European penetration, the Colonial era, African resistance and independence, and contemporary issues.

HIST-577—Modern Middle East

Three Credit Hours

Tradition, modernization, and change in the contemporary Islamic World. The impact of nationalism, secularism, and westernization in the Middle East, from the disintegration of the Ottoman Empire and the emergence of successor states to the Arab-Israeli conflict, the oil crisis, and Great Power confrontation.

HIST-582—China to 1800

Three Credit Hours

A survey of traditional Chinese history from earliest times to 1800. Emphasis is placed upon intellectual development against the background of social, political, and economic transformations.

HIST-583—Modern China

Three Credit Hours

A study of Chinese history from 1800 to the present, emphasizing the transformation of the Confucian universal empire into a modern national state. The course will focus on the problems of imperialism, nationalism, revolution, the rise of communism, the proletarian Cultural Revolution, and the Four Modernizations in post-Mao China

HIST-586—Japan to 1800

Three Credit Hours

A survey of the political, economic, and cultural development of Japan from earliest times to 1800, with emphasis on the borrowing and adaptation of Chinese culture and the development of a unique Japanese civilization.

HIST-587—Modern Japan

Three Credit Hours

A study of modern Japanese history from 1800 to the present, with emphasis on the creation of the modern state, the impact of Western civilization on Japanese culture, Japan's experience with liberalism and militarism, with Japanese imperialism, and the postwar transformation.

***HIST-590—Special Topics in U.S. History**

Three Credit Hours

Examples include Turning Points in American History, the Progressive Era, the Social and Cultural Transformation of the 1920s, etc.

*Content in these courses must relate to public history and are subject to approval by the public history coordinator.

***HIST-591—Special Topics in European History**

Three Credit Hours

Examples include Georgian Britain, Edwardian Britain, the European Left and Labor, etc.

***HIST-592—Special Topics in Latin American Asian/African History**

Three Credit Hours

A course that concentrates upon an important historical period or topic within one of four principal regions: Latin America and the Caribbean, Asia, Africa, or the Middle East.

***HIST-593—Special Topics in Peace, War, and Diplomacy**

Three Credit Hours

Examples include World War I, the Vietnam War, Diplomacy of the American Civil War, etc.

HIST-594—Historiography for Social Studies Teachers

Three Credit Hours

Designed for social studies and history teachers in the secondary and middle schools, this course seeks to familiarize students with the history of historical writing and the tools of a practicing historian. The course will examine the various methods of gathering historical data and conceptualizing and interpreting historical information. A focus will be placed on how to write and how to teach writing a research paper. (This course does not count towards the requirements for the MA in History.)

HIST-610—Special Topics in U.S. History

Three Credit Hours

Examples include the Depression and New Deal; Business, Labor and Economic History; Social and Cultural History.

HIST-620—Special Topics in Lowcountry Studies

Three Credit Hours

An interdisciplinary course organized around a specific topic (e.g., Education, the Environment of the Lowcountry, Plantation Culture, Gullah, and the Caribbean Origins of the Lowcountry). This interdisciplinary course will allow a student to explore an area of specific interest.

HIST-630—Special Topics in Peace, War, and Diplomacy

Three Credit Hours

Examples include The Diplomacy of the American Revolution, Disarmament during the 1920s, etc. This course may be offered as HIST 660 (3) for topics in European history and as HIST 680 (3) for topics in Asian, African, or Latin American history.

HIST-640—Special Topics in European History

Three Credit Hours

Examples include Social and Cultural History, the Scientific Revolution, the Age of Louis XIV, etc.

HIST-650—Special Topics in British History

Three Credit Hours

Examples include The English Reformation, the English Civil War, the Victorian Age, etc.

HIST-670—Special Topics in Asian/African/ Latin American History

Three Credit Hours

A course that concentrates upon an important historical period or topic within one of four principal regions: Latin America and the Caribbean, Asia, Africa, or the Middle East.

HIST-691—Historiography

Three Credit Hours

The core course. Examines various methods of gathering historical data and issues of conceptualization and interpretation. The course thus seeks to develop in students critical awareness and expertise based on familiarity with a variety of historical techniques, methods, and concepts.

HIST-692—Teaching of History and Social Sciences

Three Credit Hours

Organization, methods, and procedures for teaching history and the social studies in the secondary and middle schools.

HIST-710—Research Seminar in U.S. History

Three Credit Hours

A topical seminar that focuses on a central historical problem with a major research paper required. Primary sources are utilized whenever possible.

HIST-720—Research Seminar in Lowcountry Studies

Three Credit Hours

An interdisciplinary seminar designed to acquaint students with the historical methods necessary to pursue successfully a research topic. This will entail an introduction to primary sources.

HIST-740—Research Seminar in European History

Three Credit Hours

A topical seminar focused upon a central historical problem with a major research paper required.

HIST-750—Internship Experience

Three Credit Hours

This course is designed to provide students with practical experience in a field of public history. We will meet monthly as a group to address any questions or concerns that may arise at each internship site. Overall, the expectations of the course are for each student to fulfill the requirements of their internship agreement; the final grade will be based on the weekly log, the final report, and the final assessment from the internship facilitator.

Prerequisite: It is strongly encouraged that students complete HIST-525 prior to enrolling in the Internship Experience.

HIST-760—Research Seminar in Asian/ African/Latin American History

Three Credit Hours

A topical seminar focused upon a central historical problem within one of four principal regions: Latin America and the Caribbean, Asia, Africa, or the Middle East. A major research paper will be required.

HIST-770—Independent Study in History

Three Credit Hours

Repeatable once.

HIST-801-802—Master's Thesis

Six Credit Hours

*These 500-level special topics courses are designed primarily for the brief summer terms each with an enrollment of up to twenty (20) students. Lectures are accompanied by some discussion of the readings, and usually a short paper of 10 to 15 pages is required. In contrast, the comparable 600-level special topics courses (i.e., HIST-610, 630, 640, and 670) are restricted to fifteen (15) M.A. students

History and Teaching Content (HITC)

HITC-560—History of the Non-Western World

Three Credit Hours

This course introduces the histories of East Asia, Meso-America, the Middle East, South Asia, and Sub-Saharan Africa. It examines the development of each area's political, social, and cultural traditions and institutions. Close attention is devoted to social values, religious beliefs, and cultural practices. Particular emphasis is given to how contact with the West irrevocably altered each region.

HITC-501—History of the United States to 1877

HITC-502—History of the United States from 1877

Three Credit Hours

An analysis of American history from the period of discovery to the present; a brief treatment of the colonial period, followed by a more detailed study such subjects as the causes of the Revolution, the framing of the Constitution, the development of political parties, the sectional conflict, economic progress and problems, and foreign relations; special emphasis place on understanding the nature of American democracy and the role of the United States in world affairs from 1789 to the present.

HITC-503—South Carolina History

Three Credit Hours

An analysis of the political, economic, social, and intellectual development of South Carolina from its discovery to the present, with emphasis on the relation of the state to the South and to the nation.

HITC-504—Europe and the World to 1500

HITC-505—Europe and the World from 1500

Three Credit Hours

An analysis of the development of European civilization from ancient times to the present. Among the major topics are Classical Greece, Republican Rome, Imperial Rome, the Protestant Reformation, the Age of European Exploration and Conquest, Absolutism, the Enlightenment, the French Revolution, the Industrial Revolution, Liberalism, Nationalism, Imperialism, Modernism, and Totalitarianism. Particular focus will be place on Europe's relationship with the wider world.

HITC-511—Special Topics in the History of the United States

Three Credit Hours

A course that concentrates on a specific historical period or topic in United States history. Examples may include the Depression and New Deal; Business, Labor and Economic History; Social and Cultural History.

HITC-512—Special Topics World History

Three Credit Hours

A course that concentrates upon an important historical period or topic within one of five principal regions: Europe, Latin America and the Caribbean, Asia, Africa, or the Middle East. Examples include Social and Cultural History, the History of China, the French Revolution, World War Two and the Holocaust, etc.

Historic Preservation (HSPV)

HSPV-807—American Architecture

Three Credit Hours

A survey of American buildings from the sixteenth century to the modern era with particular attention to the social, intellectual, technological, and economic forces that shaped America's cityscapes, small towns and countryside.

Prerequisite: Enrollment in MSHP/HSPV program.

HSPV-808—History and Theory of Historic Preservation

Three Credit Hours

Survey history of preservation that explores a variety of theoretical issues that impact the discipline. Provides a basis for critical evaluation of historic preservation. Discusses architectural and planning theories that drive preservation policy and application.

Prerequisite: Enrollment in MSHP/HSPV program.

HSPV-809—Historical Research Methods

Three Credit Hours

Advanced instruction in historical research methods in private archival manuscript sources and public records with application to recovering and writing the history of buildings and landscapes. Students acquire research, writing and presentations skills.

Prerequisite: Enrollment in MSHP/HSPV program.

HSPV-821— Historic Preservation and Public Memory

Three Credit Hours

A seminar that explores the creation of American public memory through commemorations, festivals, museum exhibits, historic sites, monuments, and other historic preservation activities.

Prerequisite: Enrollment in MSHP/HSPV program and HSPV 808/HP 8080.

HSPV-823— Historic American Interiors

Three Credit Hours

Survey of the American domestic interior from the seventeenth to the twentieth century with emphasis on the social, cultural, economic, and technological currents that influenced the furnishing of American dwelling places. In addition to investigating period forms and materials, it explores the interpretation of primary sources and historical finishes.

Prerequisite: Enrollment in MSHP/HSPV program and HSPV 808/HP 8080.

HSPV-833—Cultural and Historical Landscape Preservation

Three Credit Hours

Overview of cultural historic landscape preservation principles and practices. Includes inventory and analysis of historic resources from a cultural landscape perspective. Qualities of integrity are studied in correspondence to location, design, setting, materials, workmanship, and feeling and association.

Prerequisite: Enrollment in MSHP/HSPV program and HSPV 819/HP 8190.

Intelligence (INTL)

INTL-515/CRMJ-515/-PSCI-515—Topics in Homeland Security

Three Credit Hours

Selected special topics or problems in the general areas of homeland security to fit the needs of students as well as the specialized knowledge of the faculty.

INTL-560—Intelligence and Homeland Security Administration

Three Credit Hours

Seminar on effective management principles and practices as they apply within homeland security organizations. Organizational and management theories are analyzed and applied to the contemporary structure of homeland security organizations with emphasis given to a review of the research related to the development of leadership skills for homeland security management.

INTL-568/CRMJ-568/PSCI-568—International and Domestic Terrorism

Three Credit Hours

In-depth seminar on the nature of international, transnational, and domestic political violence, with some attention to the phenomenon of “state terrorism” (international repression) and its potential impact on the conduct of American foreign policy. The course also reviews and critiques current explanations for terrorist behavior. Issues addressed include conceptualizing and defining terrorism, the structure of violent politics, the lessons and patterns from the history of contemporary political violence, State support for terrorism, and counterterrorism as a public policy problem.

INTL-569/ PSCI-569—National Security Policy

Three Credit Hours

Seminar which examines the components of United States security policy. Course discusses the roles and agencies involved in the development of national security policy. Consideration given to factors, both internal and external, affecting national security.

INTL-570—Homeland Security

Three Credit Hours

Seminar on homeland defense and security. The course takes an in-depth look at the agencies involved in homeland security and the interagency processes which exist to integrate the services of federal agencies and state and local governments with armed forces and defense agencies.

INTL-572—Legal and Ethical Dimensions of Intelligence and Homeland Security

Three Credit Hours

A study of the role of justice, ethics, integrity, and ethical behavior in homeland security and the intelligence community. The course examines ethical issues regarding the application of law and challenges associated with the protection of American citizens against internal and external threats. Consideration is given to the function of ethical conduct in the rule of law, use of authority, and exercises of governmental power as part of U.S. government responses to threats to homeland security. The course includes a thorough review of issues related to the rules of engagement, the U.S. Patriot Act, Border Patrol, and Security, the Transportation and Safety Administration (TSA) regulations, and the treatment of terrorists. Ethical dilemmas and practical applications are explored.

INTL-580—Introduction to Intelligence

Three Credit Hours

This course provides an introduction to the field of intelligence and national security. We will examine the history and development of United States intelligence community. Specific topics include the intelligence cycle, the relationship between intelligence professionals and policy makers, the restructuring of the U.S. intelligence community, oversight and accountability, and covert action as a policy option. The moral and ethical implications of intelligence practices will also be discussed.

INTL-581—Intelligence Research and Analysis

Three Credit Hours

This course seeks to develop in students the skills and abilities necessary for conducting basic intelligence analysis. A variety of exercises and practical applications are used to foster critical thinking skills, the planning and coordination of data collection from a variety of sources, and the use of analytic tools to establish connections between people, places, events and other entities. Students are exposed to computer software programs that visually depict complex relationships. Cross listed as CRMJ 581.

INTL-582—Intelligence Theory Application

Three Credit Hours

This course introduces the student to the discipline of intelligence and provides the student with an understanding of how intelligence systems function and how intelligence estimates and products are derived. By understanding the basic psychology of intelligence, organizational trends and cognitive cultural differences, the student will gain insight to how intelligence analysis actually transpires.

INTL-585—Topics in Intelligence

Three Credit Hours

Selected special topics or problems in the general area of intelligence to fit the needs of students as well as the specialized knowledge of the faculty - possible offerings include: Narcoterrorism, Weapons of Mass Destruction and Emerging Threats. Topics include the intelligence cycle, the relationship between intelligence professionals and policy makers, the restructuring of the U.S. intelligence community, oversight and accountability, and cover action as a policy option. The moral and ethical implications of intelligence practices will also be discussed.

INTL-600- Intelligence Internship

Three Credit Hours

This course provides the student with an opportunity to explore career interests while applying knowledge and skills learned in the classroom to real-world problems encountered in Homeland Security agencies/ the Intelligence Community (IC). The experience also helps students gain a clearer sense of future learning needs and provides an opportunity to build professional networks.

Prerequisite: Consent of Department or Program Head

INTL-601—Homeland Security Internship

Three Credit Hours

This course provides the student with an opportunity to explore career interests while applying knowledge and skills learned in the classroom to real-world problems encountered in Homeland Security agencies/ the Intelligence Community (IC). The experience also helps students gain a clearer sense of future learning needs and provides an opportunity to build professional networks.

Prerequisite: Consent of Department or Program Head.

Leadership (LDRS)

LDRS-710—Ethics, Values, & Principled Leadership

Three Credit Hours

In this course students will study ethics, to include its philosophical foundations. Students will also learn and practice ethical decision making through dilemma resolution processes. Leadership virtues, values, and character will be emphasized as leadership essentials. Servant leadership, authentic leadership, and the role of individual spirituality will be explored. Principled leadership will be defined as the subscription to a particular set of positive values.

Prerequisite: None

LDRS-711—Leading Change: Organization Development and Transformation

Three Credit Hours

In this course students examine the leadership processes associated with achieving effective change, including transformational leadership. Students will study the conscious and purposeful processes involved in developing an organization's capabilities targeted toward achieving its mission. Students will engage in organizational diagnoses and study leader intervention methods aimed at achieving organizational change with the goal of improvement toward mission accomplishment.

Prerequisite: LDRS 722 or LDRS 750

LDRS-712—Leading Teams: Coaching, Culture, Diversity, and Globalization

Three Credit Hours

This course focuses upon team development through leadership in an environment characterized by diversity. Students learn about effective team development strategies and the role that leaders play in coaching. Students also examine the role of culture in organizations as it impacts behavior, group effectiveness, and the capability of the organization to learn. Globalization and international cultures are also explored.

Prerequisite: None

LDRS-714—Strategic Leadership, Vision, Mission and Contemporary Issues

Three Credit Hours

The critical importance of vision as purposeful direction is emphasized in this course. Strategic leadership is examined as the alignment of the organization with its environment in terms of mission orientation. Contemporary issues are derived from the examination of the current environment for leadership and leaders.

Prerequisite: LDRS 722 or LDRS 750

LDRS-715—Leadership Capstone Project

Three Credit Hours

Students will conduct a formal research project under the guidance of a professor who serves as the project monitor. The project will focus upon leadership or a topic directly related to leadership.

Prerequisites: Research Methods course (PSCI 501 or EDUC 512), Communications course (BADM 713 or LDRS 723), LDRS 722 and all remaining required or elective LDRS courses. During a student's last term of degree completion, this course may be taken concurrently with an LDRS-prefix courses.

LDRS-716—Independent Study

Three Credit Hours

An in-depth study of a selected topic in leadership.

Prerequisite: Permission of the Department Head

LDRS-722/BADM-722—Leadership in Organizations: Principles and Practices

Three Credit Hours

This course is a seminar that focuses on the understanding and application of organizational theory and leadership principles. In addition, the course will include components on developing individual leadership skills and different theories of organizations. The applications component of the course will include a variety of approaches such as cases, films, guest speakers, individual self-assessments, role-play, team building exercises, and a leadership portfolio.

Prerequisite: None.

LDRS-723/BADM-713—Communications for Leadership

Three Credit Hours

This course provides insight on the role of organizations as communication systems in which effective writing and speaking are crucial. Emphasis is on developing awareness of verbal and written styles, interpersonal skills, and creating a repertoire of writing and speaking strategies.

Prerequisite: None.

LDRS-750—Evolution of Military Leadership Thought

Three Credit Hours

This foundational course presents principles, theories, and empirical models of effective and ethical leadership. The subject of leadership will be examined primarily as a behavioral science and applied in the specific context of military teams, units, and organizations. Through a variety of approaches and methods, the course will analyze and evaluate literature, research, and actual case studies relating to military leadership.

Prerequisite: None.

LDRS-751—Survey of U.S. Military Leaders

Three Credit Hours

This course gives the student the opportunity to apply the leadership theories and models learned in LDRS 750 to examine U.S. military leaders. The course will focus on 13 selected U.S. military leaders. These leaders will be examined from their historical significance, their successes/failures, their styles, their backgrounds, how they developed as leaders, their leadership skills and effectiveness.

Prerequisite: LDRS 722 or LDRS 750

LDRS-752—Survey of World Military Leaders

Three Credit Hours

This course studies military leadership in world history. It seeks to identify the qualities and precepts of military leadership in different places and times, and to distill from them applicable principles and instructive examples for contemporary or future leaders. It examines military leadership at the strategic, operational, and tactical levels, and in the eras of antiquity, early modernity, and the 20th century. Its focus is upon non-American military leaders.

Prerequisite: LDRS 722 or LDRS 750

LDRS-753—Strategy & Contemporary Military Leadership Issues

Three Credit Hours

This course will focus on contemporary military leadership issues derived from the examination of the current environment for military leadership. In addition, the course will focus on the basics of strategy and will include a significant examination of U. S. military strategy.

Prerequisite: LDRS 722 or LDRS 750

LDRS-766/BADM-766—Human Resource Development

Three Credit Hours

This course examines Human Resource Development (HRD) as a field through the learning, development, and behavior of humans in social systems. These systems include but are not limited to, workforce, education, and family. Research from Management Science, Education, Psychology, and Sociology strengthen HRD theory and practice. The purpose of this course is to explore the integration of the individual into work organizations by examining work issues in learning, training, leadership, and psychosocial development. A primary focus of this course is on applied performance management informed by human sciences research as a tool that can be applied to productivity.

Prerequisite: None

Note: This course relates to, but is distinct from, BADM 768 Human Resource Management.

Mathematics (MATH)

MATH-511—Number Theory

Three Credit Hours

The Euclidean algorithm; prime and composite integers, elementary Diophantine equations, Pythagorean triples, Euler's phi-function, congruences, Euler-Fermat theorems, exponents and primitive roots, quadratic residues.

MATH-512—History of Mathematics

Three Credit Hours

A survey of the development of mathematics from the time of the ancients to the present, analysis of causes for the retardation of the advancement of mathematics in different centuries, contributions by underrepresented cultures and selected reading to show the contributions of mathematics to the development of science.

MATH-514—Methods for Middle/Secondary Mathematics

Three Credit Hours

Various methodologies for teaching middle and secondary mathematics will be introduced and used in the course. The emphasis will be on using techniques and ideas suggested in the NCTM standards and South Carolina Frameworks. Ideas on how to supplement textbook material and how to motivate students will be presented. Students in the course will have the opportunity to practice the techniques presented. Note: All undergraduate mathematics prerequisites must be completed before taking this course.

MATH-518—Technology in Mathematics Classrooms

Three Credit Hours

This course will introduce new technological developments and explore ways to use calculators, computers, etc. in the teaching of mathematics.

Note: May be substituted for MATH 618.

MATH-521—Modern Geometry

Three Credit Hours

A reexamination of elementary geometry from an advanced standpoint. Metric and synthetic approaches to plane and solid geometry, topics in non-Euclidean geometry.

MATH-530—Linear Algebra

Three Credit Hours

A linear algebra course which emphasizes the geometry of vectors in two- and three dimensions. Topics include linear transformations, bases, orthogonality, matrix algebra, and applications in the real world as well as applications in mathematics.

MATH-532—Modern Algebra

Three Credit Hours

An introduction to the terminology, concepts, and methods of modern Abstract Algebra. Topics discussed include groups, rings, integral domains, fields, and isomorphism. Examples drawn from familiar number systems are used to illustrate elementary properties of the systems discussed.

MATH 542—Probability and Statistics

Three Credit Hours

Topics will include probability, random variables, important probability distributions, sampling distributions, point and interval

estimation, hypothesis testing, regression, correlation, and analysis of variance. Emphasis will be given to applications in the fields of biology, business, agriculture, political science, and education.

MATH-545—Applications of Discrete Mathematics

Three Credit Hours

Discrete mathematical topics are introduced and used in various applications. Included are counting techniques, combinatorics, graphs, theory, and recurrence relations.

MATH-550—Mathematical Modeling

Three Credit Hours

The course is designed to strengthen the content knowledge needed to use mathematical modeling as an effective tool in problem solving. Topics include models which require use of some or all of the following: difference equations, curve fitting, graphing, spreadsheets, geometry, matrices, calculus, maximization and minimization, and simulation using random numbers.

MATH-553—Calculus from an Advanced Standpoint

Three Credit Hours

This course is designed to prepare teachers who may teach the Advanced Placement course in calculus. Emphasis will be on understanding background and concepts involved in the development of calculus. The use of graphing calculators and other technology will be demonstrated and practiced.

MATH-570—Selected Topics

Three Credit Hours

Special topics in mathematics which are not covered in other courses. This course may be repeated for additional credit, as the topic change.

MATH-618—Mathematical Technology Resources for STEM Education

Three Credit Hours

This course is applicable to multiple middle and high school academic disciplines: mathematics, science, technology, and middle/high school engineering such as Project Lead the Way. This course is 100% online in an asynchronous format; modules may be completed anytime within the week assigned. The course content will introduce students to open-source (free) mathematical software packages and tools. Middle and high school teachers will learn how to use these mathematical software packages and tools for mathematical modeling, classroom presentation and demonstration, illustration and exploration of mathematical concepts, and hands-on projects for teaching mathematics. The class will collaborate on a wiki. The prerequisite for this course will be successful completion of undergraduate class in College Algebra and Trigonometry.

Note: May be substituted for MATH 518.

Mechanical Engineering (MECH)

MECH-604—Advanced Mechanics of Materials

Three Credit Hours

Advanced topics in mechanics of materials, including three-dimensional stress and strain transformations, torsion of non-circular prismatic bars, shear center, unsymmetrical bending, curved

beams, flat plates, elastic strain energy, and theories of failure and application to machine and structural design.

Prerequisites: CIVL 304 or consent of program director.

MECH-605—Materials and Process Selection

Three Credit Hours

Engineering application of materials. Material, shape, and process selection for mechanical designs based on function, constraints, objectives, and free variables. Materials and the environment.

Prerequisites: CIVL 304 or consent of program director.

MECH-606—Fatigue and Fracture

Three Credit Hours

Stationary crack under static loading, energy balance, crack initiation and growth, dynamic crack growth, and fatigue of metals, ceramics, polymers, and composites.

Prerequisite: MECH 304 Engineering Materials or equivalent.

MECH-611—Advanced Fluid Mechanics

Three Credit Hours

Advanced Fluid Mechanics is a continuation of concepts presented in a typical undergraduate course in fluid mechanics. The course introduces vector, tensor, and indicial notation. Topics in incompressible fluid dynamics are explored at depth including viscous flows, the Navier-Stokes equations, and boundary layer theory. Basic concepts in turbulent flow are also covered.

Prerequisites: MATH 231 and MECH 311 or consent of program director.

MECH-615—Applied Heat Transfer

Three Credit Hours

Fundamentals of conduction, convective heat transfer, diffusive and convective mass transfer, heat-exchanger design; tradeoff associated with heat transfer systems, workable and optimal system.

Prerequisites: MECH 415 or consent of program director.

MECH-617—Advanced Topics in Renewable Energy Systems

Three Credit Hours

Advanced topics in renewable energy sources to include solar heating and cooling, wind resource characteristics and assessments; wind turbine technologies (fixed and variable-speed turbines); wind power transmission; integration and interconnection issues; and photovoltaic energy. Surveys the life cycle cost and present value to evaluate systems. Same as MECH 417 but includes graduate student project / report.

Prerequisites: MECH 415 or consent of program director.

MECH-618—Energy Sources, Technology, and Policy

Three Credit Hours

Multidisciplinary overview of energy technologies, fuels, environmental impacts, and public policies. Quantitative engineering analysis in energy, including the differences among fuels and energy technologies, the electricity sector, liquid fuels, conventional fuels, renewable fuels, impacts on the environment, basics of atmospheric chemistry, and water use for power plant cooling. Energy policy and the societal aspects of energy, such as culture, economics, war, and international affairs, are covered.

Prerequisites: MECH 415 or consent of program director.

MECH-619—Power Systems Engineering

Three Credit Hours

Physical features, operational characteristics, and analytical models for major electric power systems and components; advanced techniques for solving large power networks; load flow, symmetrical components, short circuit analysis.

Prerequisites: MECH 415 or consent of program director.

MECH-625—Computer-Aided Design and Analysis

Three Credit Hours

Geometric and solid modeling, finite element analysis, optimization, rapid prototyping. Emphasizes practical utilization of computer-based design tools.

Prerequisites: MECH102 and MECH 325 or consent of program director.

Corequisite: MECH 635.

MECH-631—Advanced Engineering Mathematics

Three Credit Hours

Classification and solution of partial differential equations; includes linear superposition, separation of variables, Fourier and Laplace transform methods, Green's functions, similarity solution, and spectral methods; introduction to solution of nonlinear partial differential equations, including both exact and approximate techniques, with a strong emphasis on physical systems.

Prerequisite: MATH 335 (or equivalent undergraduate Applied Mathematics II course) or consent of program director.

MECH-635—Computer-Aided Design and Analysis Laboratory

0 Credit Hours

Non-credit laboratory to accompany MECH 625.

Co-requisite: MECH 625

MECH-640—Manufacturing Process and Design

Three Credit Hours

Selection and analysis of manufacturing processes. Product and process design for automated manufacturing. Economic analysis of manufacturing. Automated manufacturing, knowledge-based systems, and flexible product manufacture.

Prerequisites: MECH 340 or consent of program director.

MECH-645—Machine Design

Three Credit Hours

Selection, design, assembly, and analysis of common machine elements including springs, shafts, gears, clutches, brakes, and bearings. Computer-based methods of optimization employed when appropriate.

Prerequisites: MECH 345 or consent of program director.

MECH-650—Modeling, Analysis, and Control Systems

Three Credit Hours

Methods for analytical modeling, analysis, prediction, and control of linear, stationary time series of multidisciplinary dynamic systems, including mechanical, electrical, electro-mechanical, hydraulic and pneumatic systems; includes examples of advanced research in nonstationary time-series modeling and applications in manufacturing and other areas. Students complete a project on a topic of their choice.

Prerequisite: MECH 350 and MECH 450 or consent of program director.

MECH-655—Advanced Mechatronics

Three Credit Hours

Integrated use of mechanical, electrical, and computer systems for information processing and control of machines and devices. System modeling, electro-mechanics, sensors and actuators, basic electronics design, signal processing and conditioning, noise and its abatement, grounding and shielding, filters, and system interfacing techniques.

Prerequisite: MECH 350 and MECH 450 or consent of program director.

MECH-660—Advanced Design

Three Credit Hours

Creative decision-making processes for design. In-depth study of design in mechanical engineering. Quality functions, robust design, axiomatic design, and design for assembly.

MECH-670—Applied Aerodynamics

Three Credit Hours

Applied Aerodynamics introduces the basic theories for analyzing the aerodynamic forces on a vehicle in flight. Topics include incompressible flow over airfoils and finite wings, laminar and turbulent boundary layers in airfoil analysis, and boundary layer transition.

Prerequisites: MATH 231 and MECH 311 or consent of program director.

MECH-697—Special Topics in Mechanical Engineering

Three Credit Hours

Special topics in mechanical engineering will be offered to graduate students occasionally when the interest of the students and the availability of an instructor dictate. The syllabus must be approved by the mechanical engineering faculty. Since the content of the course may change, a student may repeat this course for credit with the permission of the department head.

Prerequisites: Consent of program director.

ENGR-698—Engineering Internship

Zero to Six Credit Hours

This course gives engineering students real-world, practical application and experience to complement the classroom education they have already received. The student will pursue advanced knowledge and understanding by working for a company completing engineering requirements. The scope of activities is tailored to the educational focus of the student in consultation with the faculty advisor and company supervisor.

Prerequisite: Department Head approval

MECH-702—Theory of Elasticity

Three Credit Hours

Plane stress and plane strain; two-dimensional problems in rectangular and polar coordinates; strain energy methods; complex variables in two-dimensional problems; the general equations of three-dimensional elasticity.

Prerequisites: MECH 604 (Advanced Mechanics of Materials) or consent of program director.

MECH-703—Theory of Plasticity

Three Credit Hours

Stress and strain tensors; elastic stress-strain relations, criteria of yielding; plastic stress-strain relations; elastoplastic problems of

spheres and cylinders; the plane elastoplastic problem; the slip-line field.

Prerequisites: MECH 604 (Advanced Mechanics of Materials) or consent of program director.

MECH-708—Mechanics of Composite Materials

Three Credit Hours

Analysis of stress, strain, and strength of fiber reinforced composite laminates and structures. Topics include laminated plate theory, stress analysis of orthotropic plates, damage mechanisms, fatigue, impact, thermal and environmental effects.

Prerequisite: MECH 604 (Advanced Mechanics of Materials) or consent of program director.

MECH-750—Introduction to Modern Control Engineering

Three Credit Hours

State variable methods, eigenvalues, and response modes; controllability, observability, and stability; calculus of variations; optimal control; control of regulator and tracking servomechanisms; Hamilton-Jacobi, dynamic programming; deterministic observers, Kalman filter; discrete and continuous time.

Prerequisite: MECH 350 and MECH 450 or consent of program director.

MECH-755—Nonlinear Control Engineering

Three Credit Hours

Characteristics of nonlinear systems; State space formulation; stability criteria; Liapunov functions; describing functions; signal stabilization; Popov and circle criteria for design; adaptive control-systems.

Prerequisite: MECH 350 and MECH 650 or consent of program director.

MECH-771—Compressible Flow

Three Credit Hours

Compressible Flow combines aspects of classical thermodynamics and equilibrium mixtures with compressible fluid flow. Chemical thermodynamics and real gases are explored. One-dimensional flows through nozzles and diffusers are analyzed. Normal and oblique shock relations, Prandtl-Meyer flow, and method of characteristics are also introduced.

Prerequisites: MATH 231 and MECH 611 or consent of program director.

MECH-772—Computational Methods in Thermal Sciences

Three Credit Hours

Computational Methods in Thermal Sciences is an introduction to the field of Computational Fluid Dynamics (CFD). Finite difference methods for the solution of fluid dynamics and heat transfer problems are utilized. Students will gain a general understanding of numerical methods, computer programming, and fluid dynamics and heat transfer through project-based assignments. Finite volume methods are also introduced.

Prerequisites: MATH 231, MECH 611, MATLAB experience or consent of program director.

Physics (PHYS)

PHYS-510—Engineering Applications in STEM

Three Credit Hours

The flight of heavier than air vehicles is a wonder and a marvelous application of the principles of physics. Turning these principles into technology which is safe and effective requires knowledge and understanding of these principles of physics which makes flight possible and a command of structured engineering design which makes useful applications possible. This course provides both an understanding of the physical principles of flight and an introduction to the engineering design process. Teachers involved in the STEM disciplines will find the design projects addressed in this course directly applicable as student design projects in their classes. Through these case studies your students can not only learn that the underlying physics is not that difficult but can also have fun implementing what they learn in the design projects.

Political Science (PSCI)

PSCI-500/CRMJ-500—Seminar in Social Science

Three Credit Hours

An interdisciplinary introduction to the social sciences with an emphasis on the perspectives and patterns of inquiry of several subfields. This course surveys the empirical and theoretical contributions of different social science disciplines in order to provide a fundamental understanding of the dynamics of individual and group behavior. Topics include ethics, social science methodology, and the key criticisms of these methods.

PSCI-501/CRMJ-501—Research Methods in Social Science

Three Credit Hours

An examination of methods in the scientific study of social phenomena with emphasis given to the systematic study of society and contemporary research problem in the social sciences, including research design, data collection, data analysis, and computer applications.

PSCI-502—The American Federal System

Three Credit Hours

This course will examine the origins of and the relationships between the national government and the state and local governments. Topics covered will include the nature of the federal system and overviews of the functions and powers of the national and state and local governments. Particular attention will be given to an evaluation of the policy-making process through a study of one or more policy areas such as urban policy, welfare policy, and environmental policy.

PSCI-503—The Politics of American Democracy: Political Behavior, Interest Groups, and Political Parties

Three Credit Hours

This course will examine the political process in the United States, including an analysis of public opinion, the mass media, political parties, interest groups, voting behavior, and elections. It will incorporate an introduction to the basic methods of data analysis in order to allow students to read and understand social science literature.

PSCI-506—Legislative Process

Three Credit Hours

A study of the organizations and procedures of a legislative body with attention on its role in policy formation and its relationships with other parts of a political and governmental system.

PSCI-507—American Presidency

Three Credit Hours

A study of the modern presidency with attention to its origin and its historical and constitutional development. Emphasis is placed on the examination of the various roles and functions of the President and on an analysis of presidents in action.

PSCI-509—Urban Politics

Three Credit Hours

A survey of urban areas and their development with emphasis on the politics of U.S. urban and suburban areas. Topics explored through lectures, seminars and student-led discussions of the professional literature include types of urban governance; urban demographics; suburbanization and gentrification; “urban sprawl”; the development of professionalized city planning; public administration and finance; pluralist competition in city regimes; race and politics; economic development; issues of federalism; and city-county consolidation and state-city relations.

PSCI-510—Topics in Political Science

Three Credit Hours

Selected topics that fit the needs of students as well as the specialized knowledge of the faculty. Topics could range from stability and change in the American political system to the best way to attain security in a nuclear-armed world.

PSCI-521—Advanced Placement: American Government

Three Credit Hours

This course reviews and examines the materials, methods, and approaches utilized in organizing and teaching the high school advanced placement course on American Government. Successful completion of the course satisfies the state requirement for certification to teach the advanced placement American Government Course.

PSCI-555—Topics in Political Science Leadership Application

Three Credit Hours

Selected topics in political leadership application. Topics could range from leadership studies of the American presidency; U.S. foreign policy decision makers; or global leaders. This course satisfies the “leadership application” requirement for students in the leadership graduate certificate program.

PSCI-561—Law and Legal Process

Three Credit Hours

A general survey of the American legal process (except for the criminal justice process) with emphasis on the nature and function of law, the organization of legal institutions (primarily the state and federal judiciaries), an introduction to civil law and the civil justice process, the roles of judges and lawyers, the judicial decision-making process, and the impact of court decisions.

PSCI-562—East Asian Affairs

Three Credit Hours

A survey of contemporary political and economic issues within China, Japan, Taiwan, and the Koreas. This course examines the governmental and economic institutions within each country with emphasis on intra-regional relations; bilateral relations between the individual countries and with other states including the United States; and regional issues that impact Asia, the Pacific, and the globe.

PSCI-563—South Asian Affairs

Three Credit Hours

A study of key countries in the region including India, Pakistan, Nepal, Afghanistan, and Sri Lanka, with an emphasis on issues of development and security concerns such as nuclear weapons development, territorial disputes, communal conflicts, and other forms of political violence. Attention is also paid to the great power aspirations of India and Pakistan and their relations with the United States.

PSCI-564—US Foreign Policy

Three Credit Hours

This course will address two major topics: (1) the constitutional and structural foundations of the American foreign policymaking process, through a consideration of the presidency, executive institutions (the state department, department of defense, the intelligence community, and Congress, as well as the ongoing dynamic relations among these actors. The role and impact of other relevant actors in the foreign policy formation process (i.e., the media, interest groups, as well as that of public opinion will also be addressed. (2) The second no less important issue we will address is that of globalization on the choices and freedom of action the United States had enjoyed since the end of WW II. The emergence of a transformed geopolitical environment as well will be reviewed.

Students will be guided in analyzing the new context of American foreign policy as follows: (a) engaging in individual and small group analysis and presentation on individual foreign policy cases, to wit., researching how impact of American foreign policy is interpreted by leaders and publics in selected countries; (b) looking at survey research to understand the shaping and role of American public opinion on the foreign policy process; and (3) cross-comparison of the views of various activist elite foreign policy influencers, and the manner in which these views enter the formal foreign policymaking process (for example, the cycling of key policymakers from government to think tanks, the media, and academic institutions.

Students will be expected to complete a comprehensive final exam as well as submit a research paper on a topic derived from the course content. Students with relevant experiences (such as military or government service, may with the instructors permission utilize such documentable experience in their research paper.

PSCI-565—International Politics

Three Credit Hours

By interlinking the study of international politics, global affairs, and geopolitics, this course aims to provide graduate students with a solid foundation for further study and work in the field. It applies the major theories, concepts, and debates in international politics to “real-world” events and issues to help students fully grasp the nature and relevance of this field of study. It intertwines readings

and discussion with students' own thinking to encourage critical thinking, analysis, research, and communication skills.

PSCI-566—International Political Economy

Three Credit Hours

This course examines the relationship between economic and political behavior and the various ways in which domestic and international "agents" use political processes, institutions, and regimes to influence state policies and the international environment. In doing so, it analyses why and how politics and economics interact to shape the way we live. The course contains three parts. The first focuses on the major theoretical perspectives on political economy, including mercantilism, liberalism, and Marxism. The second examines some of the major components of the modern world economy: multilateral trade, domestic trade policy, international finance, and monetary policy and exchange rates. Finally, the course investigates current issues in international political economy, such as the North-South gap, the role of multinational corporations, and the effects of globalization.

PSCI-567—Global Democracy

Three Credit Hours

This course looks at the question of democratic governance across the globe. It presents an understanding by the concept of democracy both theoretically and practically; a discussion of efforts to measure democracy in order to help differentiate between democracies and non-democracies; an exploration of the reasons behind the historical spread of democracy; and an investigation of the numerous challenges and obstacles to the spread and consolidation of democracy. Both domestic and international factors are important not only in promoting democracy but also in inhibiting its adoption. Finally, the course concludes with an overview of a number of regional and country-specific experiences/case studies related to the democratization process.

PSCI-569/INTL-569— National Security Policy

Three Credit Hours

Seminar which examines the components of United States security policy. Course discusses the roles and agencies involved in the development of national security policy. Consideration given factors, both internal and external, affecting national security.

PSCI-571—Comparative Politics

Three Credit Hours

This course introduces students to the core themes, ideological debates, and methodological approaches used in the field of comparative politics. In doing so, it encourages students to examine some of the questions of enduring interest to political scientists, including the origins and influence of the state, the causes and consequences of authoritarian and democratic forms of government. It also looks at variations within regime types and how they may affect the function of key political institutions and overall governance. As students engage with these questions, they will explore the interaction between economic, social, historical, and institutional factors in explaining political developments. Critical thinking and the ability to articulate clearly the strengths and weaknesses of different approaches are stressed throughout the course.

PSCI-572—International Organization

Three Credit Hours

This course examines the development and growth of international organizations and their relationship between each other as well as their member states. It focuses on the internal dynamics of the organizations as well as their external manifestations in sub-regional, regional, and global policies and programs. The organizations covered in the course are the United Nations, the North Atlantic Treaty Organization, the African Union, and the Arab League. The emphasis behind each organization is its origins, growth, and change. The course reviews the establishment of the United Nations and the original attempts by member states to correct the failures of the League of Nations before following the political and economic development of the organization. The North Atlantic Treaty Organization is examined in terms of its origins and how the organization continued to modify its purpose and mission as international dynamics altered around it. This will be compared to the defunct South East Asian Treaty Organization with the purpose of understanding why the former succeeded and the later failed. The course covers how and why the African Union was conceived from the Organization of African Unity and the development and progression of its policies to form a continental customs union and common market through the work of regional economic commissions. The Arab League is examined in terms of its original purpose, how and why the organization decreased in effectiveness, the growth of sub-regional organizations to carry out its original purpose, and its recent resurgence as a single voice for its members.

PSCI-573—Politics of Economic Development (Service Learning)

Three Credit Hours

By combining academic work with hands-on experience as a volunteer, this course provides students an in-depth understanding of the economic development process. The course begins by examining the concept of development and the forces that influence economic development and growth in developing countries. With a focus on the relationships between the market, state, and civil society, it covers the various components of development that economists typically study, including economic growth, income inequality, poverty, population, urbanization, migration, education, health and nutrition, and the environment. Throughout the course, individual readings and assignments are selected with a view to students' volunteer placements so they can apply the concepts covered in their on-the-ground work and share their experiences with others.

PSCI-574—Global Issues

Three Credit Hours

The course will review the new context for state interaction and global order. The most significant question is whether the international community can weather the storm of new challenges and threats without a central gatekeeper, such as the United States. Globalization has also given other states (established and newly emerging powers) opportunities to exploit the inability of the United States to foment a new architecture of stability and order. Follower states have found opportunities (many derived from the expanding and deepening global trading system) to undermine American dominance. Also, some states have moved to establish regional political and security alliances that not only speak to their needs (counter-terrorism, immigration, and natural resource exploitation, for example) but also dilute the "traditional" influence of the United States in these matters. At the same time, there has

been a proliferation of “non-state actors” who are able to capitalize on the measurable weakening of national authority and the hesitancy of nation-states to coherently identify, define, and deal with the new challenges.

Students will review the impact of global issues from two perspectives: (1) challenges and (2) opportunities within the framework that the traditional role of states as “gatekeepers,” buffering and processing challenges to stability and order has been gradually transformed. Throughout the course, student groups will take up several issues and proceed to analyze whether international institutions such as the United Nations, and regional and functional non-governmental organizations (NGOs) are in fact dysfunctional when confronted with the challenges of globalization. Student groups will also address the question of whether the Cold War origins and patterning of these NGOs are obstacles to the development of flexible and creative strategies. Finally, although it might be fairly argued that the traditionally conceived state’s influence and role has been diminished, it can also be proposed that the state system will not wither away quietly, and that states will engage in behavior necessary to protect and grow their influence—newly emerging states may resist the influence of older states, but the former seeks similar symbols of power and behave in ways to enhance their own economic and political power on the world stage.

Students will be required to complete a comprehensive final exam and to submit a research paper that may be derived from one or more of the paradoxes and contradictions described above. Students with relevant experiences in the private sector, government, military, or non-governmental organizations may, with the permission of the instructor use such experiences to shape their research paradigms.

PSCI-575—US Foreign Policy Leadership

Three Credit Hours

This course examines the various principles and models of leadership and applies them to US Foreign Policy decision making with an emphasis on the leadership styles exhibited by different US presidents, secretaries of state, and national security advisers. The course covers leadership and decision making from the individual and group level perspectives and includes factors related to personal psychology, group dynamics, models of bureaucracy, evaluation of inputs, and interpretation/misinterpretation of information. The course applies these factors to a series of major US foreign policy decisions covering topics that include deploying the military, political negotiations, and economic bargaining. The case studies also range from those where a leadership decision must be made within hours or days to those where the decision required a year or more for formulation. In each case study, the leadership styles of the US president, secretary of state, and national security adviser (and in some cases the secretary of defense) are analyzed in terms of the principles and models of leadership and decision making.

PSCI-576—International Law

Three Credit Hours

This course is an introduction to public international law for students of international relations. The primary purpose of this course is to enhance students’ understanding of the ways in which international law orders international politics. Why do sovereign states voluntarily forfeit maximum independence and agree to constrain their behavior in the international system? How and to

what extent has international law been used in resolving conflicts between nations? How and to what extent has it facilitated the achievement of common goals? What is the relationship between international law and states’ foreign policies? Emphasis throughout the course is on the substantive rules of the law, the relationship between law and politics, and on the historical episodes that illustrate the issues.

PSCI-577—Conflict Studies

Three Credit Hours

What causes war? What causes intergroup conflict short of war? Why do groups of people systematically kill other groups of people? What do we need to know to prevent conflict/war if possible, and prepare for it when necessary? Is it possible to prevent conflict/war (or prepare for it) if it is often caused by accidents, miscalculation, and misperception? With these questions in mind, this course will develop your ability to analyze the causes, conduct, and consequences of intergroup conflict and war. We will begin by exploring the consequences of war for personal, national, international, and global security. We will then examine theories about the causes of war and apply them to understand the occurrence of World War I, World War II, and the Cold War. Next, we will explore the conduct and consequences of these wars at the doctrinal, strategic, operational, and tactical levels. Finally, we will discuss contemporary issues in war, peace, and security, including the causes, conduct, and consequences of the war on terror and the war in Iraq, weapons proliferation, the future of military technology, the rise of new great powers, humanitarian intervention, and alternatives to war. During the course, you will develop critical reading skills by evaluating other scholars’ theories, arguments, and evidence. As will become apparent, there are numerous theories that attempt to explain what causes war and/or peace. You are encouraged to challenge these theories and arguments.

PSCI-592—International Political Theory

Three Credit Hours

Major theoretical writing from the ancient Greeks to the present day with emphasis on a comparison of ideas and on the relationships between theories and contemporary problems.

PSCI-662—Constitutional Law: Civil Rights and Liberties

Three Credit Hours

A study of the underlying and basic principles of the Constitution as reflected in the leading decisions of the United States Supreme Court with special attention directed to the Bill of Rights and the Thirteenth, Fourteenth, and Fifteenth Amendments.

Project Management (PMGT)

PMGT-650—Overview of Technical Project Management

Three Credit Hours

This course applies a systems engineering approach to project management and introduces the student to the entire lifecycle of technical projects as offered by Project Management Institute’s A Guide to the Project Management Body of Knowledge (PMBOK® Guide) and other resources. Practical assignments are combined with industry-accepted standards for the purpose of developing a logical framework for managing and leading technical projects. The five major process groups of Initiation, Planning, Executing,

Monitoring and Controlling, and Closing are investigated in relationship with the ten knowledge areas of Integration, Scope, Time, Cost, Quality, Human Resources, Communication, Risk, Procurement and Stakeholder Management. Professional responsibility and ethics will receive particular emphasis. A Capstone Project requirement is a major component of this course and integrated into the other Technical Project Management (TPM) courses, PMGT 651, PMGT 652, and PMGT 653. A formal presentation of the completed TPM Capstone Project to industry, academic and public professionals will be required at the successful completion of the fourth TPM course.

Prerequisite: None

PMGT-651—Technical Project Planning and Scheduling

Three Credit Hours

This course explores the principles and applications of work breakdown structures (WBS); the Critical Path Method (CPM) and Program Evaluation and Review Technique (PERT); earned value management, critical chain scheduling and buffer management; definition and allocation of resources; resource leveling; and schedule compression. Course content includes realistic projects, case studies, MS Project computer applications, along with web-based management and technology tools. Each student will continue working on their Capstone Project started in PMGT-650.

Prerequisite: PMGT-650; or instructor permission.

PMGT-652—Applications of Quality Management

Three Credit Hours

This course investigates risk planning and the principles of quality management and their application in the technical project environment. The standards, tools, techniques and deliverables as related to the development and implementation of a comprehensive quality system will be explored. Topics related to ISO 9000, lean six sigma methodology, business process improvement, and risk planning and mitigation will be addressed. Each student will continue working on their Capstone Project started in PMGT-650.

Prerequisite: PMGT-650 & PMGT-651 or instructor permission.

PMGT-653—Technical Project Support and Operations

Three Credit Hours

This course is designed to provide students with knowledge and understanding of the activities necessary for the completion of a project, but not normally recognized as project activities. These activities include project plan development, human resources, communication, procurement, project closing, and stakeholder management. Each student will continue working on their Capstone Project started in PMGT-650, and if PMGT-651 and PMGT-652 have been successfully completed, will formally present the completed project as part of this course.

Prerequisite: PMGT-650, PMGT-651 and PMGT-652.

PMGT-660—Overview of Technical Program Management

Three Credit hours

This course introduces the student to the complexities of technical program management, as offered by Project Management Institute's (PMI) The Standard For Program Management, and other sources. The course provides an overview of the technical expertise, leadership and management skills, and cultural factors that generate success in management of today's complex technical programs. An overview of the social, economic, political, media, and regulatory issues faced by program managers will be explored

to enable an understanding of the complex issues that must be managed. The primary intent of this course is to expose students to the many challenging issues being faced internally and externally so that successful processes can be developed and pitfalls avoided. Key topics covered will include the need for effective processes and management agility, establishing a culture of communication, superior stakeholder engagement, and active executive support in program governance.

Prerequisite: PMGT-650; or instructor permission.

PMGT-661—The Legal and Contractual Aspects of Program Management

Three Credit hours

This course provides an overview of legal and contractual issues that influence and impact technical program and project management decisions. An overview of the legal system and regulatory framework will be developed to facilitate an understanding of potential legal issues. Primary focus is placed upon understanding and avoiding pitfalls associated with the contracting process as it pertains to Engineering and Construction programs and large Government/Private Programs. Other topics include legal relationships between the Client, Prime Contractor and Design Professional; negligence and the Design Professional; Design Professional licensing and liability; the role of insurance and bonds in program management; personnel and labor issues; intellectual property; environmental liability in public and private construction; claims, arbitration, and dispute resolution options; and the ethical implications of decisions.

Prerequisite: PMGT-650

PMGT-662—Program Development Strategies and Processes

Three credit hours

This course provides a detailed exposure to Technical Program Development; understanding of market needs, a sound business model, a well-defined financial strategy, and well-thought-out strategic goals. The course is designed to help the professional engineer, technical program manager, and all others who must come together as a working team, to better understand their respective roles and responsibilities in that process. Through case examples, analysis, and project planning tools, this course looks at the longer organizational view of program development. It will present proven ways to improve program development cycle times and to take advantage of new market opportunities. Students will learn how to develop and analyze Technical Requests for Proposal (RFPs) that are essential in today's global economy. Key topics include program development, analysis tools, preparation/evaluation of RFPs, building on existing product lines, and product platform management.

Prerequisite: PMGT 653 and PMGT 660; or instructor permission

PMGT-671—Project Manager Leadership Development

Three Credit Hours

This course is designed to provide project management students with knowledge and understanding of proven concepts for the development of leadership skill essential to lead and manage technical project teams. It is intended for students who want to improve their knowledge in the area of technical project leadership and management responsibilities. Students will be exposed to the issues related to understanding the difference between leadership and management, the leadership behaviors unique to the best performing project managers, the casual influences that impact leadership development, and the importance of coaching,

mentoring, and corporate culture. Course content will include the study of proven research results, case studies, guest speakers, individual study, and executive interviews.

Prerequisite: PMGT-650 or instructor permission.

PMGT-672—Applied Leadership Concepts

Three credit hours

This course is designed to provide project/program management professionals with advanced leadership skills. Areas covered in the course will include leadership challenges unique to leading without formal authority, virtual project teams, executive leadership issues, conflict resolution, negotiations, and secession planning. Course content will include case studies, guest speakers, executive interviews, and team case studies.

Prerequisites: PMGT-650 and PMGT-671

PMGT-680—System Engineering Management Fundamentals

Three credit hours

This course is an overview of system engineering practices and principles, with an emphasis on system life cycle processes and activities. Content is based on the International Council on Systems Engineering (INCOSE) System Engineering Handbook as well as other related texts and applicable industry standards. Students will participate in individual and team projects. Topics of study include System Engineering Concepts, the System of Systems (SOS), System Definition and Development, System Design Requirements, integration strategies, System Modeling, Project Planning, System Engineering Processes, leadership, and organizing to manage processes associated with complex technical systems.

Prerequisites: None.

PMGT-681—Requirements Development and Management

Three credit hours

This course is designed to build the knowledge and skills necessary to manage the translation of needs and priorities into a system of requirements and to develop derived requirements. These together form the basis of the engineering of complex technical and multidiscipline projects. Course topics will focus on managing the processes associated with the development of system requirements. The course will introduce concepts associated with the translation of user needs and priorities into basic functions and quantifiable performance requirements, along with how to analyze and improve upon the requirements in areas such as correctness, completeness, consistency, measurability and testability.

Prerequisite: PMGT-680 or instructor permission.

PMGT-682—System Verification and Validation

Three credit hours

This course is designed to build knowledge and performance competencies related to the verification and validation processes associated with ensuring the integrity of an evolving design solution. A comprehensive exploration of system verification and validation practices will be performed to provide a basis for applying technical modeling and simulation techniques and lifecycle phases. Course topics will include an examination of applicable industry standards and provide a broad understanding associated with relevant process areas.

Prerequisite: PMGT-680 and PMGT-681 or instructor permission.

PMGT-683—Systems Modeling and Integration

Three credit hours

This course provides an overview of how systems engineers employ models and simulations to implement the systems engineering process model. Conceptual understanding and practical skills in the application and integration of systems modeling and simulation will be addressed, in addition to model and simulation development and application to facilitate decision making. Principles and theoretical frameworks will be explored to provide the practical knowledge and skills associated with the application and integration of systems modeling and simulation within complex systems or technical organizations. Topics of study include process improvement, lean enterprise concepts, requirements allocation, and system optimization.

Prerequisite: None.

PMGT-684—Human System Integration

Three credit hours

This course examines the application of human system integration (HSI) theories and principles to understand human factors, safety engineering, and the limitations of the human. Emphasis will be placed on reducing life cycle costs and optimizing system performance through an understanding of the relationships between humans and technology in complex systems. Topics will focus on the design of interactive products to support the way people communicate and interact, including human factors, safety, rapid prototyping, mock-ups, habitability, survivability and team behavior.

Prerequisites: None.

PMGT-685—Decision and Risk Analysis

Three credit hours

This course makes a broad study of decision analysis tools and techniques used in technical and management decision making within a risk management context. Integration of sustainability with decision and risk analysis will be emphasized. Students will develop an industry standard Risk Management Strategy and a Decision Management Strategy. Topics of study include decision and alternative definition, analytical decision support, probability theory and statistics, decision framing, cognitive bias, risk planning and identification, risk analysis, risk breakdown structures, sensitivity and multi-attribute utility analysis and decision implementation.

Prerequisites: None.

PMGT-690—Independent Study

Three credit hours

This course is designed to complement classroom instruction by allowing for work on an advanced academic project under the direction of one or more of the faculty of the School of Engineering. Students will have the opportunity to relate their classroom experience to an investigation of advanced topics. Applicable efforts, activities, and topics will be approved through the Department of Engineering Leadership and Program Management.

Prerequisites: PMGT-650 and instructor permission.

Psychology (PSYC)

PSYC-500—Human Growth and Development

Three Credit Hours

An analysis of the principles of human development with emphasis on the contributions of biological, social, psychological, and multicultural influences as applied to an understanding of cognitive, emotional, social, and physical development across the life-span. Particular emphasis will be given to the psychobiological nature and social context of development as well as cultural and ethnic variations impacting on developmental processes.

PSYC-501—Principles of Behavior and Cognitive Change

Three Credit Hours

This course will provide a systematic review of key concepts and principles of contemporary behavior and social learning theory. This material serves as a backdrop for an examination of a functional analytic approach to behavioral assessment and cognitive-behavioral therapeutic interventions. The theoretical rationale and empirical basis of traditional and more recently developed cognitive-behavioral interventions will be reviewed. Examples of these interventions include exposure techniques, contingency management, child-parent training, social skills training, cognitive therapy interventions, motivational interviewing, acceptance and commitment therapy, mindfulness, and dialectical behavioral therapy.

Prerequisites: Officially admitted into Clinical Counseling Program or School Psychology Program.

PSYC-502—Psychological and Educational Exceptionalities: Children and Adolescents

Three Credit Hours

This course is an overview of child and adolescent educational and behavioral disorders. The course will focus on definition, etiology, epidemiology, diagnosis, and treatment/intervention. Overlap and distinguishing characteristics of educationally and psychiatrically defined disorders (e.g., DSM-V) will be emphasized.

Prerequisites: Officially admitted into School Psychology Program.

PSYC-503—Objective Assessment

Three Credit Hours

This course is critical to data collection in the School Psychology program's data-based problem-solving model. It is an introduction to the administration, scoring, and interpretation of measures of intelligence and visual-motor abilities. The student will have practical experiences in the use of appropriate instruments. Each student must demonstrate proficiency with intervention planning within the problem-solving model.

Prerequisite: Officially admitted into School Psychology Program.

PSYC-504—Special Techniques in Assessment

Three Credit Hours

This course is critical to data collection in the School Psychology program's data-based problem-solving model. It is an advanced assessment course building on skills learned in PSYC 503, where students gain practical experience with measures of cognitive functioning, academic achievement, adaptive behavior, and preschool assessment. Emphasis is on integrating information from all sources (i.e., problem analysis) into information utilized in intervention planning within the problem-solving model.

Prerequisite: Objective Assessment (PSYC-503)

PSYC-505—Personality, Social, and Emotional Assessment

Three Credit Hours

Students will have direct experiences in assessment and evaluation with a specific focus on multiple diagnostic (e.g., DSM-5) and classification (e.g., IDEA) systems. Emphasis will be on collecting and interpreting data/information on behavior tendencies and styles with special attention to school age children and youth. Students will gain practical experience in the use and interpretation of objective measures (e.g., rating scales), direct observation, and other data collection techniques to facilitate accurate classification/diagnosis. Practical experiences will be integrated with analysis of the extant literature relating to legal/ethical issues, validity of data, and empirical findings. Focus will be on utilization of such information in a model that emphasizes data-based problem solving, planning and intervention at multiple levels across systems.

Prerequisites: Objective Assessment (PSYC-503) and Special Techniques in Assessment (PSYC-504).

PSYC-507—General Psychopathology Assessment and Differential Diagnosis

Three Credit Hours

A study of the major mental illnesses delineated in major diagnostic classification systems (e.g., DSM-5). The course will have a particular focus on differential and overlapping symptomatology within and across major classes of disorders. Models of assessment will be matched with specific symptom patterns. Continuity and overlap of normal and deviant behavior will be recognized. Additionally, students will examine the etiological and epidemiological factors in psychopathology.

Prerequisites: Officially admitted into Clinical Counseling Program or School Psychology Program.

PSYC-508—Counseling and Personalities Theories

Three Credit Hours

This course is designed to provide a balanced and systematic study of the major counseling and personality theories. The course will integrate personality theory and normal and abnormal personality with a particular emphasis on therapeutic application of the major theories of counseling intervention.

Prerequisite: Completion of or concurrent enrollment in Human Growth and Development (PSYC-500) and officially admitted into Clinical Counseling Program or School Psychology Program.

PSYC-512—Ethics, Roles, and Law

Three Credit Hours

This course will provide a survey of the field of school psychology. The role and function of the school psychologist, legal, ethical and professional issues in school psychology will be topics covered in this course. Field experiences, research methods and contemporary trends in school psychology will also be addressed. Students will be oriented to a data-based problem-solving model of school psychology that is empirically driven and intervention focused within an ecological framework. An important outcome for this course is to foster participant's dispositions towards appreciating the diverse opportunities for school psychologists to positively impact communities, and to value implementing best practices as a school psychologist.

Prerequisite: Officially admitted into School Psychology Program.

PSYC-514—Ethics and Professional Issues in Counseling

Three Credit Hours

This course is designed to provide the Clinical Counseling student with a broad overview of professional issues related to counseling, including reference to current and historical role issues, licensure and professional development, and emphasis on matters of ethics and mental health law related to the counseling profession. Particular attention will be given to the examination of ethical principles and mental health law relevant to the potential conflicts/dilemmas arising in the course of counseling practice (e.g., suicide, homicide, role conflict, multiple relationships, etc.). Issues specific to service delivery to minorities and special populations will be addressed, as will possible ethical conflicts arising within particular counseling modalities (e.g., marital and family counseling, group counseling).

Prerequisite: Officially admitted into Clinical Counseling Program.

PSYC-516—Psychological Resiliency for Tactical Athletes

Three Credit Hours

This course will provide students with foundational knowledge of psychology in the military and theoretical information on the interaction between physical and mental health as they relate to readiness and resiliency of military service members, veterans, law enforcement officers, firefighters, and other tactical personnel. This course will explore the meaning of readiness and resiliency, including the interconnectedness of mind, body, interpersonal, and spiritual fitness.

PSYC-523—Statistics and Research Design

Three Credit Hours

Course will focus on descriptive and inferential statistics as tools for exploration of quantitative research methods. Students will develop competence in generating basic research designs to answer questions in schools, agencies, and practice.

PSYC-525—Basic Counseling Techniques

Three Credit Hours

Course focuses on fundamental skills of interviewing, assessment, case conceptualization, and intervention. These preparatory skills are taught through role-play and other practical approaches. The course is practice-oriented and designed to assist the student in developing professional skills. The student will be involved in analyzing his or her own counseling style and performance.

Prerequisites: Officially admitted into School Psychology Program and completion of all or concurrent registration in: Human Growth and Development (PSYC-500), Principles of Cognitive and Behavioral Change (PSYC-501), General Psychopathology (PSYC-507), and Counseling and Personality Theories (PSYC-508).

PSYC-526—Clinical Counseling: Basic

Three Credit Hours

Course focuses on fundamental skills of interviewing, assessment, case conceptualization, and intervention. These preparatory skills are taught through role-play and other practical approaches. The course is practice-oriented and designed to assist the student in developing professional skills. The student will be involved in analyzing his or her own counseling style and performance.

Prerequisites: Officially admitted into Clinical Counseling Program and completion of all or concurrent registration in: Human Growth and Development (PSYC-500), Principles of Cognitive and Behavioral Change (PSYC-501), General Psychopathology (PSYC-507), and Counseling and Personality Theories (PSYC-508).

PSYC-540—Theories & Biology of Addiction

Three Credit Hours

The purpose of this course is to provide students with 1) a rich foundation of theories of addiction (such as the disease model), 2) a basic understanding of the biological bases of addiction, including brain functioning associated with specific substances, and 3) basic assessment skills. These will be used to help develop case conceptualization skills. *Prerequisites:* Human Growth and Development (PSYC-500), Principles of Cognitive and Behavioral Change (PSYC-501), and General Psychopathology (PSYC-507).

PSYC-549—Foundations of Psychometrics

Three Credit Hours

This course is designed to prepare students to become intelligent users of assessment information within the clinical decision-making process. The primary focus is on understanding the philosophical and statistical properties of measurement instruments, developing an understanding of the advantages and limitations of assessment approaches, enhancing sensitivity to social and ethical issues in assessment, and using an integrative approach for applying the results of assessment to diagnosis and the clinical decision-making process. Students will also learn program evaluation models and quality improvement mechanism for school and mental health programs.

Prerequisite: Officially admitted into Clinical Counseling Program or School Psychology Program.

PSYC-553—Introduction to Family Dynamics

Three Credit Hours

This course is designed to serve as an introduction to the various schools of family therapy. Students will study the historical context and underlying pragmatic assumptions inherent in the diverse schools. Students will survey the major contributors to each theoretical perspective and examine techniques unique to each perspective.

Prerequisite: Completion of or concurrent enrollment in Human Growth and Development (PSYC-500).

PSYC-555—Special Topics in Psychology

Three Credit Hours

This course is designed to provide service providers and students with information and knowledge regarding contemporary psychological and social problems. Various topics will be offered as the need arises. This course varies across semesters. Students must obtain approval from their advisor to include this course as an elective.

PSYC-557—Counseling and Psychotherapy for Couples

Three Credit Hours

This course is designed to provide an overview of the major theories of relationship psychotherapy and technical interventions utilized within the major approaches to couples counseling. The development aspects of family and couples counseling will be reviewed and special course topics will include spouse abuse, divorce mediation and adjustment, and ethical considerations. The training activities provided in this course will include diagnosis of family problems, assessment techniques, case presentations, enactments, and other experimental work. Video use and analysis are significant parts of the course.

Prerequisite: Officially admitted into Clinical Counseling Program and Family Dynamics (PSYC-553).

PSYC-561—Cultural Issues in Psychological Practice

Three Credit Hours

This course examines the influences of cultural, ethnic, minority, gender, socioeconomic, and other important group factors on psychological, educational and social development. Focus is on the development of aspects of multicultural competence. Students will learn about a variety of identity groups and engage in experiences that offer opportunities to shift focus from their own perspectives to that of people from different backgrounds. The course emphasizes ways that variations in experiences and perceptions of diverse individuals relate to psychological assessment and treatment.

Prerequisite: Completion of or concurrent enrollment in Growth and Development (PSYC-500) and officially admitted into Clinical Counseling Program or School Psychology Program.

PSYC-570—Social and Cognitive Foundations of Interpersonal Behavior

Three Credit Hours

This course presents a survey of the scientific study of social influence, emphasizing that a fundamental understanding of the basic forces affecting how individuals think and behave in social settings serves as a cornerstone of effective interpersonal behavior and sound leadership.

PSYC-599—Thesis

Three Credit Hours

This course entails the completion of an applied research project. Toward this end, students will select one of three designated options and, in conjunction with a supervising departmental faculty member, formulate and address an original research question. The student's research project will culminate in a presentation at a local, regional, or national psychology association meeting (or equivalent), or publication. This course will focus on data collection procedures, statistical analysis of data, methods of conducting program evaluation, and empirically-based decision making.

Prerequisite: Officially admitted into Clinical Counseling Program or School Psychology Program and Completion of Statistics and Research Design (PSYC-523).

PSYC-602—Social and Biological Basis of Child and Adolescent Behavior

Three Credit Hours

This course is an advanced course with a contemporary focus on the child and adolescent with particular attention to biological and social forces that shape development. Developmental processes will be examined through a review of current research. Part of the course will focus on cultural/technological forces (e.g., computers, television, video games) which are particularly important to today's youth and which are important forces impacting on development.

Prerequisite: Officially admitted into Clinical Counseling Program or School Psychology Program and Human Growth and Development (PSYC-500).

PSYC-605—System Theory and Consultation: Prevention and Intervention

Three Credit Hours

This course is critical to the intervention stage of the School Psychology program's data-based problem-solver model. School psychology students will develop skills in systems theory and

intervention, consultation, and alternative delivery services to schools. Traditional test-and-place perceptions will be replaced with perceptions based on the principles of prevention, consultation, alternative intervention methods, and intervention progress monitoring. The course will cover systems theories and models of consultation to include instructional consultation, mental health consultation, and behavioral consultation. Interventions that promote positive school cultures will be examined across classroom, school, family, and community systems.

Prerequisite: Officially admitted into School Psychology Program and Ethics, Roles and Law (PSYC-512).

Corequisites: Practicum in School Psychology I (PSYC-615) and Practicum in Consultation and Intervention I (PSYC-617).

PSYC-606—Academic Interventions

Three Credit Hours

This course is critical to the School Psychology program's data-based problem-solving model and emphasizes a multi-tiered model including primary, secondary, and tertiary prevention (e.g., Response to Intervention; RTI). It is an applied course for school psychologists-in-training designed to develop skills in designing, implementing, and evaluating evidence-based interventions that improve the academic achievement of primary and secondary school students. The course will cover curriculum-based assessment (CBA) and measurement (CBM), collaborative problem-solving, and analysis of students' academic strengths and needs. Emphasis will be placed on linking assessment data to development of appropriate interventions designed to address specific needs in reading, writing, and mathematics.

Corequisites: Practicum in School Psychology I (PSYC-615) and Practicum in Consultation and Intervention I (PSYC-617).

*This course addresses competencies that meet the requirements for Read to Succeed.

PSYC-607—Behavioral and Emotional Interventions

Three Credit Hours

This course is critical to the School Psychology program's data-based problem-solving model. It is an applied course for school psychology students designed to develop skills in designing, implementing, and evaluating evidence-based interventions that improve the behavior and emotional well-being of primary and secondary school students. The course will cover behavioral principles and appropriate assessment techniques, including systematic observation of behavioral and functional behavioral assessment. Emphasis will be placed on linking assessment data to development of appropriate interventions designed to target specific needs related to internalizing and externalizing behaviors.

Corequisites: Practicum in School Psychology II (PSYC-616) and Practicum in Consultation and Intervention II (PSYC-618).

PSYC-608—Advanced Counseling Techniques for School Psychologists

Three Credit Hours

An applied course designed for school psychology students to further develop and cultivate their counseling skills, with particular emphasis on practices useful within school settings. Through didactic as well as experiential methods, the course builds off of content and skills learned in PSYC-525. Students will apply previously learned content, theories, and modalities to counseling practices that are useful for promoting mental health and psychological wellness among children and youth. Under the supervision of the course instructor as well as

certified/licensed school psychologists, students will gain practical experiences in delivering counseling Techniques.

Prerequisite: PSYC-525

PSYC-611—Clinical and Professional Issues in Counseling

Three Credit Hours

This course examines current issues in professional psychology with an emphasis on preparing students for field placement experiences, licensure, and clinical practice. Topics include: 1) licensure and professional development; 2) use of evidence-based practice, and 3) psychopharmacology for the non-physician.

Prerequisite: Students must have completed all core courses and passed comprehensive examination.

PSYC-612—Reading Assessment and Intervention: A Neuropsychological Perspective

Three Credit Hours

Students will learn to evaluate the reading ability of children and youth using both qualitative and quantitative assessment techniques. This course will emphasize diagnosis leading to scientifically validated instructional interventions. Reading problems will be couched in a neuropsychological framework and will be consistent with the DSM and IDEA. Students will learn how to incorporate assessment data with existing psychological data on the person served to generate a more complete psychological profile. Students will also learn how to incorporate assessment data within a response to intervention framework to develop evidence-based reading interventions. Reading programs and methods of instruction used to prevent reading problems before they occur will also be reviewed.

Co-requisites: Practicum in Consultation and Intervention: I and II (PSYC-616/618).

*This course addresses competencies that meet the requirements for Read to Succeed.

PSYC-615/616 —Practicum in School Psychology: I and II

Two Credit Hours each

These practical courses are part of the final “capping off” of students before they begin professional school psychology internships. Applying the data-based problem-solving model, students will engage in the administration and scoring of traditional and alternative measures of intelligence, achievement, adaptive behavior, visual-perceptual, and socio-emotional functioning that are commonly used by school psychologists. Students will apply data to problem analysis and recommend or implement appropriate interventions, monitor the effectiveness of the interventions, and adhere to standards of best practice in school psychology. Students will experience various roles frequently expected of school psychologists in public schools or affiliated agencies with supervision provided by practicing certified/licensed psychologists.

Co-requisites: Practicum in Consultation and Intervention: I and II Course (PSYC-617/618)

Prerequisites: Objective Assessment (PSYC-503), Special Techniques in Assessment (PSYC-504), and Personality, Social, and Emotional Assessment (PSYC-505).

PSYC-617/618—Practicum in Consultation and Intervention: I and II

One Credit Hour Each

These practical courses involve the application of principles and theories of consultation and intervention through field-based

experiences. Students will learn to employ empirically-based treatments and to evaluate innovative treatment programs applied to a variety of children and conditions. Intervention and prevention programs will target multiple levels within the placement site, including the individual student, classroom, school, and/or system. Demonstration of learning and skill will be exhibited in the development of case studies involving children experiencing academic and/or emotional difficulties. Through these case studies, students will combine the scientist-practitioner model with a data-based problem solving approach to intervene with children in need of school psychology intervention.

Co-requisites: Practicum in School Psychology: I and II (PSYC-615/616).

Prerequisites: Objective Assessment (PSYC-503), Special Techniques in Assessment (PSYC-504), and Personality, Social, and Emotional Assessment (PSYC-505).

PSYC-620—Contemporary Issues in School Psychology

Three Credit Hours

This course provides an in-depth study of current issues and research in school psychology. Course content will cover contemporary issues in the field that impact the school psychologist’s ability to competently and effectively deliver services across multiple levels within the school system. In addition to other topics related to professional practice, the course will focus on school crisis prevention and response skills.

Prerequisite: Officially admitted into School Psychology Program.

PSYC-621/622—Internship in School Psychology: I and II

Three Credit Hours Each

A field placement in school psychology utilizing either a clinic setting (for no more than half the internship) and/or a public school setting in which the student works under the direct supervision of a certified school psychologist in conjunction with The Citadel Coordinator of School Psychology Practicum and Internships. Internship training represents the cumulative experience and the synthesis of all course work and practice. The goal is to prepare the intern for independent function as a school psychologist, i.e., data-based problem-solver, capable of providing a full range of services with a multi-culturally diverse client population. Students are required to complete 1200 clock hours (PSYC-621 and 622) of supervised internship experience.

Prerequisite: Completion of all other course work for the Ed.S. degree (including thesis).

PSYC-629—Practicum: Clinical Counseling

Three Credit Hours

This course is a supervised field experience for clinical counseling students who are at the end of their program. The practicum consists of 100 hours of work within a community agency. In addition to working with clients in the community, students experience individual and group supervision that emphasizes case conceptualization and the use of intervention strategies. The practicum course integrates previous course experiences with counseling skills. The student will complete a comprehensive case study integrating theory, research, and practical issues in the treatment of a client seen during the practicum experience.

Prerequisites: Completion of all Clinical Counseling course work (may take electives with Practicum).

PSYC-643—Advanced Clinical Counseling: Assessment

Three Credit Hours

This course integrates clinical assessment, case conceptualization, and treatment planning and evaluation. The emphasis on assessment highlights specific, focused procedures for common clinical problems. Interview methods, self-report instruments, and self-monitoring among others will be considered for their psychometric characteristics, clinical utility, and practicality. Case conceptualization will integrate the results of the assessment process with current conceptual and empirical literature on etiology and treatment. The course includes practical exercises in the assessment and conceptualization for the most common clinical problems.

Prerequisite: Students must have completed all core courses and passed comprehensive examination.

PSYC-644—Advanced Clinical Counseling: Intervention

Three Credit Hours

This course is designed to prepare clinical counseling students for the practicum experience. The student will implement and apply previous learning of theory, techniques, and understanding of the therapeutic process through experiential and didactic methods. The student will develop increased knowledge of the counseling process, including assessment, case conceptualization, diagnostics, and intervention strategies. The student will complete a comprehensive case study integrating theory, research, and practical issues in the “treatment” of a simulated client.

Prerequisite: Students must have completed all core courses and passed comprehensive examination.

PSYC-645—Advanced Clinical Counseling: Group

Three Credit Hours

This course provides students with an understanding of the role of the group counseling/psychotherapy modality in therapeutic settings. Focus is on the major components of group counseling/psychotherapy, including: client selection and preparation for group; attributes and behaviors of effective group counselors; group dynamics and group processes; stages of group development; therapeutic factors associated with groups; and methods/procedures used in group counseling/psychotherapy.

Prerequisite: The student must have completed all core courses and passed comprehensive examination.

PSYC-651/652—Internship: Clinical Counseling

Three Credit Hours Each

The internship is a supervised field experience consisting of 600 hours of work in a community agency. It involves continued refinement of counseling skills developed over the course of the student’s program. The student will complete and present a comprehensive case study integrating theory, research, and practical issues in the treatment of a client seen during the internship experience.

Prerequisites: Completion of all prior course work (may take elective with Practicum). Note that permission of advisor is required during the semester prior to enrollment in the course. Registration is contingent upon advisor approval based upon successful completion of coursework and demonstration of ability to function in a professional role in the community.

Prerequisite: Completion of all Clinical Counseling course work, including Practicum (may take elective with Internship).

Sociology (SOCI)

SOCI-501—Social Determinants of Modern Life

Three Credit Hours

This course explores some of the major determinants of group life such as social structure, socialization, stratification, the major social institutions, and social change. In addition, attention will center upon population dynamics and migration and the effects which they exert upon community life.

Spanish (SPAN)

SPAN-20—Mexico

Three Credit Hours

This is a panoramic course dedicated to an understanding of Mexico beginning with the Aztec and Mayan civilizations from before and after the conquest. The class will then focus on the colonial period, Mexican Independence (1810-1821), the nineteenth century, the Reforma, French occupation, the Porfiriato, Mexican Revolution, the Caudillismo, modern Mexico, Tlatelolco, twentieth and twenty first centuries, bilateral relations between the United States and Mexico and emigration to the United States. Some of the topics covered in the course will include, but are not limited to: Culture, politics, economics, literature, art, theater, cinema, religion, and gastronomy.

SPAN-521—The Hispanic Presence in the United States

Three Credit Hours

This panoramic course contributes to an understanding of the cultural, political, social and economic condition of the Mexican Americans, Cuban Americans and Puerto Ricans. The course trajectory will begin with a study of the Southwestern United States covering the war with Mexico and the subsequent annexation of the Mexican territory. A close look at the linguistic and ethno-racial consciousness and how it pertains to the emerging Chicano literature will be discussed. Puerto Rico: An in-depth look at the Commonwealth status of Puerto Rico, independence versus statehood, the economic crisis from the sugar trade and emigration to the United States. The course will consider the notion of Newrican and the issues of identity throughout literature including Black Poetry. Cuba: The focus begins with the Cuban Revolution and the subsequent anti-Castro culture that dominates both Cuba and the Cuban community in Miami. The course will also discuss the social, political, economic and cultural impact of the Cuban emigration to Miami and in the wake of this movement we will discuss exile literature and the phenomenon of transculturation.

SPAN-522—Culture and Literature of Spain

Three Credit Hours

A panoramic course covering the literature and culture from the Celtiberians to the Romans and from the Visigoths to the present day. Topics that will be discussed include the Islamic invasion of 711, the Reconquista, the Catholic Kings and the unification of Spain. The Golden Age of Spain from the perspective of hegemony and crisis. The course will also explore the culture and literature from the seventeenth to the nineteenth centuries, the Crisis of 98, the Spanish Civil War, the dictatorship of Francisco Franco (1939-1975) and democratic Spain (1982-2009). The course will examine Spain’s cultural and intellectual life from 1900-2000: The Generation of 1898 and 1927, culture under the rule of Franco,

progressives and the resurgence of the liberal tradition. Cultural life during the period of transition to democracy will also be discussed and will include the Constitution of 1978 as well as the formation of Spain's autonomous communities. Other areas of focus will be Spain and the European community, nationalism as it relates to the Basque Country, Galicia and Cataluña. The course will also explore the challenges of the family unit, women and childhood and conclude with a detailed look at Spain's gypsies, new immigrants, pastimes and popular culture (tapas, celebrations, bullfights, sports, tertulias and mass media).

SPAN-523—Advanced and Contrastive Grammar

Three Credit Hours

A Comparison of grammatical structures of Spanish and English, which define the linguistic perspective specific to Spanish and with special reference to practical application in spoken and written communication and in various socio-cultural contexts.

SPAN-524—Recent Trends in Teaching Spanish as a Second Language

Three Credit Hours

This course offers teaching strategies and learning practices for effectively delivering content and material in an engaging manner. It also covers the latest educational and language acquisition theories, in addition to the cultural aspects of teaching a new culture.

SPAN-525—Spanish for the Professional

Three Credit Hours

Includes the study of health, legal vocabulary, business concepts, geographic context, and cultural context. Depends on the trend taught each semester (Business Spanish, Medical Spanish, Spanish for Legal Spanish, etc.).

SPAN-550—Special Topics: Culture and Literature of South America

Three Credit Hours

Given the vastness of South America, the course is separated into three topics and will be taught in rotation each time the course is offered. (The course is repeatable and thus may be taken three times.) This will not cause duplication on transcripts as the title of each of the topics will be listed (e.g., Spanish 550 Special Topics: The Andean Countries). Listed below are the three topics:

- A. Colombia and Venezuela
- B. The Andean Countries (Ecuador, Peru and Bolivia)
- C. The Southern Cone (Argentina, Chile, Paraguay and Uruguay)

Special Topic: Colombia and Venezuela: This is a panoramic course beginning with the conquest and independence of both Colombia and Venezuela and will continue through the formation as a republic until the present day. The topics will include the first civilizations, the conquest, the War of Independence, Simon Bolivar and the ideal of unification. The course will continue with the political, social and economic condition between the nineteenth and twenty-first centuries. In dealing with modern Colombia, we will dedicate specific attention to an exploration of violence, warfare, and the narco trade's impact on national life as well as its influence on the international community. In Venezuela, special attention will be given to discuss the Caudillismo and the Llanero, the petroleum industry and the transformation of national life. The course will also discuss the positivist project of Guzmán Blanco, the dictatorial period, the Christian Democratic Project,

militarism and Chavism as a unique phenomenon in Latin America. The previously mentioned topics will be also studied through the lens of literature, particularly in the evolution of the novel from the two country's celebrated novelists: Rómulo Gallegos, José Eustacio Rivera and Gabriel Garcia Méarquez among others.

Special Topic: The Andean Countries (Ecuador, Peru and Bolivia):

This is a panoramic course beginning with Peru by exploring the conquest, independence and gestation into the present-day republic. The primary focus will be the cultural legacy of the Incan Empire, the War of the Pacific, Haya de la Torre, and the ARPA and conclude with contemporary political currents. Bolivia will be the next region of discussion and will focus primarily on the political, cultural and economic history of the country. Specifically, the Chaco War, and the Revolutionary Nationalist Movement of 1952. We will discuss the current political trends with Alan García (Peru), Evo Morales (Bolivia) and Rafael Correa (Ecuador) as well as the production of literature from the Andean region. The course will survey authors from Ollantay to Inca Garcilaso and essayists from the nineteenth and twentieth centuries. We will examine the indigenous novel from Peru and Ecuador and the works of Mario Vargas Llosa, César Vallejo and other prominent Andean authors.

Special Topic: The Southern Cone: Argentina, Chile, Uruguay and

Paraguay. This is a panoramic course that explores the conquest, independence and gestation into the present-day republics of the countries in the southern cone of South America. The course will emphasize the military dictatorships and the transition to the current neoliberal economies. The literature of Argentina will center on Romanticism with Esteban Echeverría, Domingo Faustino Sarmiento and José Hernandez. The study of Argentine literature will also include the Modernista Poetry of Alfonsina Storni and the new narrative with Jorge Luís Borges and Julio Cortázar. The literature of Chile will see epic poetry with Alonso de Ercilla as well as the Modernista and Vanguard poetry of Gabriel Mistral, Vicente Huidobro and Pablo Neruda. Attention will also be given to the novel of the Boom and Post Boom era with authors such as José Donoso and Isabel Allende. The literature of Uruguay and Paraguay will concentrate on the short stories of Horacio Quiroga, the Modernista poetry of Delmira Agustini and the novel with Augusto Roa Bastos.

SPAN-560—Hispanic Service Learning/Internship

Three Credit Hours

Course emphasizes increasing fluency in comprehension, speaking, reading, and writing skills as well as understanding of cultural issues while performing service in a Spanish-speaking atmosphere. Students are required to spend several hours providing service for a community partner to improve their language skills and appreciation for the Latino community. Taught every semester such as José Donoso and Isabel Allende. The literature of Uruguay and Paraguay will concentrate on the short stories of Horacio Quiroga, the Modernista poetry of Delmira Agustini and the novel with Augusto Roa Bastos.

SPAN-560—Hispanic Service Learning/Internship

Three Credit Hours

Course emphasizes increasing fluency in comprehension, speaking, reading, and writing skills as well as understanding of cultural issues while performing service in a Spanish-speaking atmosphere. Students are required to spend several hours providing service for

a community partner to improve their language skills and appreciation for the Latino community. Taught every semester.

Tactical Performance and Resiliency (TAPR)

TAPR-601—Introduction to Human Performance

Three Credit Hours

A study of fundamental concepts in human exercise physiology as applied to programs for improving human performance. Theories, current research, and techniques for assessing human physiological responses to exercise, physical training, and health-related physical fitness for a wide spectrum of populations will be studied, but with emphasis on tactical populations. Content will prepare students for professional certification as either a Certified Personal Trainer from the National Strength and Conditioning Association, American College of Sports Medicine, National Academy of Sports Medicine, or American Council on Exercise. Content for students entering the program with significant prior experience in human performance will prepare those students for the Certified Strength and Conditioning Specialist Certification from the National Strength and Conditioning Association.

TAPR-610—Applied Exercise Physiology and Nutrition

Three Credit Hours

This course will provide students with an in-depth understanding of how exercise and nutrition affect the body's physiological systems including, but not limited to the cardiovascular, endocrine, nervous, musculoskeletal, and respiratory systems. Additional attention will be paid to bioenergetics and the effects that extreme environmental factors such as heat, cold, and altitude have on physiological performance. Current nutritional theories and practices related to performance and proper recovery are also investigated.

TAPR-640—Tactical Strength and Conditioning

Three Credit Hours

A study of fundamental concepts in bioenergetics, biomechanics, and cardiopulmonary and skeletal muscle function and adaptation, as it relates to the physical conditioning, training, and physical fitness of tactical personnel. Current research, and laboratory techniques for assessing human physiological responses to exercise and training, will be studied. Topics to be covered include but are not limited to: testing and evaluating tactical populations, nutrition for tactical populations, and physiological issues related to fire and rescue, law enforcement, and military personnel. This course will include a 10 hour practicum to help students directly apply concepts learned in a real-world setting. Content will prepare students for professional certification as a Tactical Strength and Conditioning Facilitator from the National Strength and Conditioning Association.

Prerequisites: TAPR 601, TAPR 610

TAPR-699—Capstone Internship in Tactical Performance and Resiliency

Three Credit Hours

A supervised internship experience of at least 300 hours in a private or public sector host organization focused on performance and resiliency of tactical athletes. Students will actively participate in designing and/or delivering programs aimed at improving performance and resiliency for a single tactical athlete and/or

groups of tactical athletes. This internship will provide the student with hands-on skills and knowledge for handling the nuances of training tactical athletes. Upon completion of the internship, students will present a comprehensive summary of their internship experience, and will be formally evaluated by the internship preceptor.

Prerequisites: Students must have completed all required courses.

UNDERGRADUATE COURSE DESCRIPTIONS

Course Descriptions

Descriptions of evening undergraduate courses are listed in this section. Consult the course schedules online to determine the course offerings in a particular term.

Business Administration (BADM)

BADM-110—Computer Applications in Business

Three Credit Hours

Required of business administration juniors. The application of computer software to assist in analyzing common business decisions, with an emphasis on advanced techniques in spreadsheet development and design.

BADM-216—Communications in Business

Three Credit Hours

Required of business administration sophomores. A study of written and oral communication in organizations. Emphasis is given to communication theory including communication flows and barriers, as well as the psychology of communicating good, neutral, negative, and persuasive messages. The course also covers career planning, delivering professional presentations, electronic communications and writing formal reports.

Prerequisites: English Composition & Lit I (ENGL-101) and English Composition & Lit II (ENGL 102)

BADM-305—Legal and Ethical Environment of Business

Three Credit Hours

Required of all business administration juniors. An introduction to the legal system, with special emphasis on its relation to business. Students will contend with federal and state regulations as well as the common law to arrive at an understanding of the legality, ethics, and social responsibility of business decisions. Topics include an introduction to the judicial system, torts and product liability, administrative law and consumer protection, agency and partnership, contracts, the Constitution, criminal law, ethics, and fiduciary trust.

Prerequisite: Junior or senior standing in business administration.

BADM-309—Marketing Principles

Three Credit Hours

Required of all business administration juniors. Introduction to basic concepts and terminology in marketing; the process of developing marketing strategy, the role of marketing activities within the firm, external influences that affect the development of marketing strategy, and basic analytical tools appropriate to marketing decision-making. International and ethical issues in marketing are examined.

Prerequisite: Principles of Microeconomics (BADM-202).

BADM-310—Production & Operations Management

Three Credit Hours

Required of all business administration seniors.

Operations management focuses on the systematic direction of the processes involved in the sourcing, production, and delivery of products and services. This course addresses managerial issues such

as facility location and layout, service design, demand forecasting, production scheduling, project management, quality management (for example, lean, JIT, Six Sigma, TQM, etc.), inventory management, supply chain management, maintenance and reliability, and capacity management. Included are applications of decision models, statistical methods, or optimization techniques such as linear programming, queuing theory, simulation, or others.

Prerequisites: Business Statistics (BADM-205) or Statistical Methods (STAT-160), Introduction to Managerial Accounting (BADM-212), and Microeconomics (BADM-202).

BADM-320—International Business

Three Credit Hours

This course focuses on decisions in international business operations for small and large firms. Of particular interest are international business climate/culture, foreign exchange rates, international trade, overseas direct investment, and operations management. Students will incorporate case studies dealing with aspects of international business.

Prerequisite: Sophomore standing in business administration.

BADM-321—Business Finance

Three Credit Hours

Required of all business administration juniors. An introductory course combining both a description of the structure of business financing and a study of financial principles and practices, with special emphasis on their relation to managerial planning and control.

Prerequisite: Introduction to Financial Accounting (BADM-211)

BADM-323—Quality Management

Three Credit Hours

Students will develop an overall framework within which they can understand quality as a system. Content includes a look at the impact of the quality movement on our world during recent decades for both manufacturing and service organizations. The course focuses on management, leadership, organization, and tools needed to build and continuously improve quality and customer value throughout the supply chain. Included is a review of the contributions of those who are considered prime movers in the quality revolution, including Deming, Crosby, Juran, and Taguchi; a survey of current developments in the field; and practice in use of typical Quality Management techniques, tools, and processes including Lean, Six-Sigma, SPC, ISO 9000, business process improvement, QFD, and others.

Prerequisite: Business Statistics I (BADM-205) or Statistical Methods (STAT-160)

BADM-324—Purchasing and Materials Management

Three Credit Hours

The course introduces students to the critical role of purchasing in the supply chain. Topics may include the evolution of supply management and its strategic nature in world-class organizations; the supply manager's responsibilities; the "boundary-spanning" nature of supply management; the purchasing process, objectives and responsibilities; supplier evaluation and selection; supplier quality and risk management; negotiation framework and planning; cost concepts (e.g., direct and indirect costs, fixed, step, and variable costs, and target costs) and cost analyses; "Make or Buy" decisions; developing in-country sources of supply versus "offshoring" decisions; ethical and professional standards expected among

supply management professionals; and environmental considerations in purchasing and materials management.

Prerequisite: Business Statistics I (BADM-205) or Statistical Methods (STAT-160)

BADM-326—Principles of Real Estate

Three Credit Hours

This course provides a personal and professional perspective of the legal, financial, and ethical rights and obligations of all parties in a real estate transaction. Topics include organizing, functioning, financing, marketing, brokering, appraising, and managing of real estate transactions.

Prerequisite: Sophomore standing in business administration.

BADM-327—Principled Entrepreneurship and the Free Enterprise System

Three Credit Hours

This course explores the role of entrepreneurship in the free enterprise system, how government policies affect entrepreneurial activity within the United States and globally, and the moral and ethical dimensions of principled entrepreneurship. This course focuses on using the tools of economics to understand the entrepreneurial process, including the role of profits and losses, discovery, and creative destruction. The course examines the legal forms of business organization and the challenges involved in opening a business and writing a business plan.

Prerequisite: Junior standing in business administration.

BADM-329—Project Management

Three Credit Hours

This course introduces students to the concepts and tools currently being used in the professional field of Project Management. Students will obtain a basic understanding of project management principles and practices, increase their ability to function effectively on a project team and as a project manager, and improve their ability to communicate effectively both orally and in writing. This course includes coverage of management in a wide range of project applications from concept through operations, planning, scheduling, controlling, economic analysis, quality, and customer satisfaction are stressed. The topics in this course cover essential concepts from the Project Management Institute's A Guide to the Project Management Body of Knowledge (PMBOK).

Prerequisites: Although there are no formal prerequisites, this course is designed for students who have taken courses in management and organizational behavior, introductory finance, and statistics. Students without these courses are likely to have to devote more time to topics briefly reviewed and may have to supplement their learning on their own for some topics.

Prerequisite: Statistical Methods (STAT-160)

BADM-332 Financial Markets and Institutions

Three Credit Hours

This course provides an overview of the key financial institutions (banks, insurance companies, mutual funds, government entities, etc.), markets (stock, bond and foreign exchange among others) and the wide array of financial instruments that are available to businesses and individuals. Particular attention will be paid to risk management and how the various markets and institutions interact with each other. Activities that take place in financial markets and institutions have a direct effect on personal wealth, the behavior of

consumers and businesses, and the well-being of the overall economy.

BADM-338—Management and Organizational Behavior

Three Credit Hours

Required of business administration juniors. A study of the fundamental concepts of management and organizational behavior. Emphasis is placed on the study of human behavior, attitudes, and performance in organizations, and on the development of positive interpersonal relations. A major focus is on the managerial role of leader and decision-maker necessary for effective planning, organizing, influencing, and control of the organization. The dynamics and links among individuals, groups, and the national and international environment are analyzed to highlight the determinants of organizational effectiveness.

Prerequisite: Junior standing in business administration.

BADM-371—Leadership in Organizations

Three Credit Hours

Using a case approach as well as a significant experiential component, this course involves the application of leadership theory and practice covered in this class and in other classes in the interdisciplinary minor in Leadership Studies. The course draws from cases in business and other organizations to focus the student's learning in both individual and team projects. Issues of motivation, persuasion, ethics, power, diversity, teams, etc. will all be explored. Guest speakers/leaders will also be an important component of the course.

Prerequisite: Junior standing in business administration.

BADM-404—Investments

Three Credit Hours

A survey course that introduces different types of securities, markets, transaction costs, security regulations, and taxes. The basic techniques for analyzing the potential returns and risks of individual securities and for combining them efficiently into portfolios are also studied.

Prerequisite: Business Finance (BADM-321).

BADM-405—Marketing Management

Three Credit Hours

A study of marketing planning and decision-making from the point of view of the marketing manager in a changing economic, social, and legal environment. Basic concepts and methods of analysis used in formulating product, distribution, promotion, and pricing strategy are studied.

Prerequisite: Marketing Management (BADM-309).

BADM-406 Professional Selling

Three Credit Hours

A study of the stages of the professional selling process, and the role of sales in today's marketing environment. Emphasis on learning adaptive selling techniques and developing effective interpersonal communications skills. Sales careers are examined.

Prerequisite: Marketing Management (BADM-309).

BADM-407—Money and Banking

Three Credit Hours

The nature and functions of money, the various monetary standards, the development of our monetary system, the factors affecting the value of money, methods and objectives of money and credit control, international exchange, and analysis of recent

developments in money and credit.

Prerequisite: Principles of Macroeconomics (BADM-201).

BADM-409—Human Resource Management

Three Credit Hours

A contemporary course in the management of personnel as a resource concentrating on the historical, legal, social, economic, and ethical framework of labor relations with a focus on forecasting, planning, staffing, compensating, developing a career, labor relations, performance management, and control and evaluation of human resources.

Prerequisite: Sophomore standing in business administration.

BADM-413—International Marketing

Three Credit Hours

Introduction to global problems, cultural and ethical issues, and decision areas facing the marketing manager. Primary emphasis rests on the value of cross-cultural understanding and the need for careful adaptation of marketing efforts.

Prerequisite: Marketing Principles (BADM-309).

BADM-414—Consumer Behavior

Three Credit Hours

The study of behavioral science theories and related marketing models useful to managers in understanding consumers in the domestic and global marketplace.

Prerequisite: Marketing Principles (BADM-309).

BADM-417—Management Information Systems

Three Credit Hours

Information systems (IS) support the overall strategy of an organization in many ways. This course reviews the issues associated with managing and improving the IS function within an organization, including using IS to support decision making, manage the firm's assets, and develop and support customers. Additional topics include the critical role of IS in an organization's strategic plan, security issues, and the harnessing of technological advances for organizational growth.

Prerequisite or Corequisite: Computer Applications in Business (BADM-110)

BADM-420—Management of Change

Three Credit Hours

This course uses knowledge and skills from the social sciences to develop strategies for achieving effective change within organizations. Implementation of these strategies to achieve more effective organizations is the core of this course. Topics include team building, process consultation, confrontation and the management of conflict, and technostructural change.

Prerequisite: Management and Organizational Behavior (BADM-338)

BADM-421—Logistics Management

Three Credit Hours

Logistics is the part of supply chain management that plans, implements, and controls the efficient, effective forward and reverse flow and storage of goods, services, and related information between the point of origin and point of consumption in order to meet customers' requirements (Council of Supply Chain Management Professionals, 2003). The Course covers the role and importance of the key logistics intermediaries that facilitate global

trade. It describes the functions comprising logistics, describes how these functions interact, and explains how logistics can be managed as a system to reduce total cost.

Prerequisite: Supply Chain Management (BADM-429)

BADM-422—Strategic Management

Three Credit Hours

Required of all business administration seniors. A capstone course designed to give the student practice in integrating the numerous theory courses in all phases of business management. The student develops problem-solving and decision-making skills by assuming the role of top management in a simulated company and through the study of actual business cases.

Prerequisites: Principles of Macroeconomics (BADM-201), Introduction to Managerial Accounting (BADM-212), Marketing Principles (BADM-309), Business Finance (BADM-321), and Management and Organizational Behavior (BADM-338).

BADM-423—Personal Finance

Three Credit Hours

Personal Finance focuses on the application of basic financial tools and principles to the student's personal life. Concepts and tools covered include: the financial planning process, liquidity management, debt management, asset management, and risk management. The course will also include retirement, education, and estate planning. Upon completion of this course, the student will be prepared to create and manage their own personal financial plan.

Prerequisite: Junior standing in business administration.

BADM-425—Small Business Management/Entrepreneurship

Three Credit Hours

This course covers the environment of small business, factors of success or failure, small business management tools, and sources of financing. Student teams prepare business plans for the start-up of a business. In some instances, the teams will work with local entrepreneurs in developing business plans. The course is supported by a multimedia business planning system.

Prerequisite: Junior standing in business administration.

BADM-428—Technology and Entrepreneurship

Three Credit Hours

Technology ventures are significantly changing the global competitive landscape. This course explores the intersection of technology and entrepreneurship, including both the development of new technology-based businesses and the use of technology in launching and marketing new businesses. Students will learn about models of technological change, models of new firm strategy development, and models of organizational strategy in high-tech start-ups. Topics include: matching new technologies and markets, making money from innovation, competition between technologies, strategies for competing against established incumbents, technology portfolio development, and theories of diffusion and adoption.

Prerequisite: Junior standing in business administration.

BADM-429—Supply Chain Management

Three Credit Hours

This course focuses on basic principles and essential concepts of supply chains and their effective operation and management. Topics may include methods of resource acquisition, contract

management, procurement, production, packaging, shipping, warehousing, inventory placement, distribution, transportation, logistics planning, risk, quality, information technology, and product support.

Prerequisite: Business Statistics (BADM-205) or Statistical Methods (STAT-160)

BADM-430-435—Seminar in Business Administration

Three Credit Hours

Junior or senior standing in business administration. These courses are designed to provide students of exceptional ability and background with the opportunity to explore a variety of advanced, business-oriented, analytical techniques. Specified topics covered within these courses will be offered at the discretion of the instructor and under the supervision of the department head.

Prerequisite: approval of course instructor and department head.

BADM-450—Internship

Three Credit Hours

Senior or Junior Standing. This course gives senior students real-world work experience to complement the classroom education they have already received. Interns will learn about the variety of issues faced by today's firms and their managers, the kinds of information firms collect and use, and the development of solutions for business problems. Interns will spend ten to twelve hours each week working alongside a senior-level manager in a Charleston-area business.

Prerequisite: Junior standing in business administration.

BADM-490—Independent Study

Three Credit Hours

Approvals for enrollment during pre-registration from sponsoring professor and department head are required. This course may be taken by seniors desiring to engage in a scholarly research project of mutual interest to the student and the faculty member who directs the study. The project should culminate in a formal student research paper.

Prerequisite: Junior or senior standing in business administration.

Civil and Environmental Engineering (CIVL)

CIVL-101—Engineering Drawing

Two Credit Hours

Required of all Civil and Environmental Engineering freshmen. Use and care of drawing instruments; proper weights and types of lines for clear-cut and complete graphical representation; auxiliary and sectional views; pictorial representation with emphasis on isometric drawing, dimensioning, development of a reasonable skill in lettering. A substantial portion of the course is taught using CAD software.

Laboratory: Four hours

CIVL-103—Introduction to Civil Engineering

One Credit Hour

Required of all Civil and Environmental Engineering freshmen. The engineering design process is demonstrated through use of practical problem-solving methods for public infrastructure and built environment projects. Course subjects include civil engineering career paths, ethical canons of the engineering profession, and requirements for professional licensure. Course assignments,

conducted within a collaborative learning environment, focus on creative engineering solutions through technical analysis, teamwork, communication skills and professionalism. As a foundation for sustained success in civil engineering, additional course topics include: lifelong learning, time management, community and professional service, and career development.

Laboratory: Two hours

CIVL-202—Statics

Three Credit Hours

Required of all Civil and Environmental Engineering sophomores. Scalar and vector solutions of problems in statics; resultants, reactions, and equilibrium of forces; analysis of simple trusses, friction; centroids and centers of gravity; and moments of inertia. Lecture: Three hours.

Corequisites: Analytic Geometry and Calculus I (MATH-131) and Physics with Calculus I and Lab (PHYS-221/271)

CIVL-203—Dynamics

Three Credit Hours

Required of all Civil and Environmental Engineering juniors. Kinematics and Kinetics of particles or rigid bodies in plane motion with emphasis on the special cases of translation and rotation. The techniques of vector mathematics are employed.

Lecture: Three hours

Prerequisites: Statics (CIVL-202) with a grade of "C" or better.

CIVL-205—Surveying

Three Credit Hours

Required of all Civil and Environmental Engineering sophomores. Linear measurements, leveling, compass and transit/theodolite, total stations theory of errors, latitudes and departures, areas, stadia, coordinate geometry, construction field control, legal aspects of land surveying, and public land surveys.

Lecture: Three hours and Surveying Laboratory (CIVL-235).

Corequisites: Engineering Drawing (CIVL-101) or Introduction to Civil Engineering (CIVL-103).

CIVL-208—Geospatial Representation

Three Credit Hours

Required of all Civil and Environmental Engineering sophomores. Study of geospatial representation applications, techniques, and methods that includes topographic mapping, map projections, reference datums, state plane coordinate systems, Global Positional Systems (GPS), Geographic Information Systems (GIS), and remote sensing.

Lecture: Three hours.

Prerequisites: Surveying (CIVL-205), Surveying Laboratory (CIVL-235), and Analytic Geometry and Calculus I (MATH-131) or Honors Mathematics I (HONR-131).

CIVL-210—Computer Application for Civil and Environmental Engineering

Three Credit Hours

Required of all Civil and Environmental Engineering sophomores. Instruction in computer applications to problems chosen from civil engineering fields. Development of computer-based methods for analyzing civil engineering systems. The class will address a range of related topics including algorithm development and implementation, professional and ethical aspects of computer applications, development of self-directed learning skills

appropriate for civil engineering.

Lecture: Three hours

CIVL-235—Surveying Laboratory

One Credit Hour

Required of all Civil and Environmental Engineering sophomores. Application of principles obtained in CIVL-205 through actual field work. Horizontal control activities include distance measurements by tape and EDM, angular measurements by theodolite and total station; traversing; traverse closure computations; balancing computations; and preparation of boundary plat. Students will be introduced to the use of data collectors as part of their field work. Computer-aided applications and computer drafting are available.

Laboratory: Two hours

Corequisite: Surveying (CIVL-205).

CIVL-239—Geomatics Laboratory

One Credit Hour

Required of all Civil and Environmental Engineering sophomores. Preparation of topographic map, Geographic Positioning Systems mapping controls, Geographic Information System applications, and understanding the geometry and nomenclature of horizontal and vertical curves.

Laboratory: Two hours

Prerequisite: Surveying (CIVL-205) and Surveying Laboratory (CIVL-235), *Corequisite:* Geospatial Representation (CIVL-208), and Engineering Drawing (CIVL-101).

CIVL-302—Highway Engineering

Three Credit Hours

Required of all Civil and Environmental Engineering juniors. Highway alignment, right-of-way and easements; earthwork and grading; road user benefits, traffic operations and capacity; design of intersections and interchanges; construction surveys; drainage design; highway materials, design of asphalt mixtures; pavement thickness design; and construction management, contracts, estimates and specifications. Preparation of plans and design documentation for a highway project including; horizontal alignment, vertical alignment, roadway cross-sections, storm water drainage, earthwork and mass diagram calculations, and construction materials.

Lecture: Three hours

Prerequisites: Transportation Engineering (CIVL-305); *Corequisite:* Asphalt and Concrete Laboratory (CIVL-327).

CIVL-304—Mechanics of Materials

Three Credit Hours

Required of all Civil and Environmental Engineering juniors. Elastic properties of structural materials; internal stresses and strains; principal stresses and strains including Mohr's Circle; axial; torsion; flexure; shear; bolted joints; combined stresses; shear and moment diagrams; beam deflections. Supplemented by CIVL 307.

Lecture: Three hours

Prerequisite: Statics (CIVL-202) with a grade of "C" or better.

CIVL-305—Transportation Engineering

Three Credit Hours

Required of all Civil and Environmental Engineering juniors. A study of technical, multimodal, and organizational interrelationships of United States transportation mobility systems

focusing on policy, planning, capacity, operation, and design of land transportation, airport and seaport facilities. Topics include highway design, roadway safety, traffic engineering, travel forecasting, railroad alignment, public mass transit, airport layout, and harbor/ports.

Lecture: Three hours

Prerequisites: Introduction to Civil Engineering (CIVL-103), Engineering Drawing (CIVL-101), Geospatial Representation (CIVL-208), Geomatics Laboratory (CIVL-239).

CIVL-307—Materials Laboratory

One Credit Hour

Required of all Civil and Environmental Engineering juniors. Laboratory supplement to CIVL-304. Introduction to the use of testing machines and equipment; strength and deformation measurements of ferrous and nonferrous metals, concrete, and wood; properties of materials as determined by results of tests in compression, tension, bending, torsion; behavior of columns; use of electric resistance strain gages; use of ASTM specifications and test procedures.

Taken concurrently with or subsequent to CIVL-304.

Laboratory: Two hours

Prerequisite: English Composition (ENGL-102); *prerequisites or Co-requisites:* Computer Application for Civil and Environmental Engineering (CIVL-210), Mechanics of Material (CIVL-304).

CIVL-309—Structural Analysis

Four Credit Hours

Required of all Civil and Environmental Engineering juniors. Structural analysis of determinate and indeterminate beams and frames using classical, approximate, and computer-based methods.

Lecture: Four hours

Prerequisites: Mechanics of Materials (CIVL-304) with a grade of "C" or better and Analytic Geometry and Calculus II (MATH-132).

CIVL-310—Statics and Mechanics of Materials for Non-Civil Engineers

Three Credit Hours

Vector solutions of problems in statics, resultants, reactions and equilibrium of forces. In addition, the brief study of mechanics of materials including stress and strain relationships and various types of loading on structural members.

Lecture: Three hours

Prerequisites: Analytic Geometry and Calculus II (MATH-132) and Physics with Calculus Lab (PHYS-221/271).

CIVL-314—Engineering Economy

Two Credit Hours

Required of all Civil and Environmental Engineering juniors. Topics include the time value of money, equivalence, simple and compound interest, nominal and effective interest rates, present worth and capitalized cost evaluation, equivalent uniform annual worth evaluation, rate of return evaluation, benefit/cost ratio evaluation, depreciation, corporate and individual income tax, after-tax economic analysis, and engineering ethics as applied by practicing engineers.

Lecture: Two hours

CIVL-317—Professional Sustainability

One Credit Hour

Required of all Civil and Environmental Engineering juniors. The

ethical cannons of the engineering profession require civil engineering graduates be well-rounded effective leaders in planning, design, and construction of public infrastructure and the built-environment required to establish safe, healthy, equitable and vibrant communities. Course topics focus on preparing students to serve with distinction as technical leaders in addressing the needs of society and include: teamwork, public administration, communication, public policy, ethics, lifelong learning, attitudes, and leadership.

Lecture: One hour

Prerequisite: Junior standing in Civil and Environmental Engineering

CIVL-320—Fluid Mechanics

Three Credit Hours

Required of all Civil and Environmental Engineering juniors. An introduction to fluid characteristics, properties, and the fundamentals of fluid statics, fluid dynamics, fluid flow, and fluid measurements. Hydraulic principles including pressurized pipe flow, and open channels are also covered. Classroom assignments include design problems and problem solving.

Lecture: Three hours

Prerequisite: Statics (CIVL-202) with a grade of “C” or better; *Prerequisites or Co-requisites:* Either Analytic Geometry & Calculus (MATH-231) or Applied Engineering Mathematics (MATH-234)

CIVL-321—Hydrology and Hydraulics

Three Credit Hours

Required of all Civil and Environmental Engineering juniors. This course focuses on presentation and application of fundamental hydraulic and hydrology principles including hydrologic cycle; hydrograph development; flood routing; design of storm water systems and water distribution systems, pipe networks, pumping systems, flow through orifices, flumes & weirs, and design of hydraulic structures.

Lecture: Three hours

Prerequisite: Fluid Mechanics (CIVL-320)

CIVL-322—Introduction to Environmental Engineering

Three Credit Hours

Introduction to water, air, solid and hazardous waste. Included are social and ethical considerations, legal and regulatory principles, risk analysis, the effect of pollutants in the environment, ground-water flow theory and application, and the engineering principles governing the generation and control of these pollutants.

Lecture: Three hours

Prerequisites: General Chemistry I (CHEM-151), General Chemistry I Laboratory (CHEM-161), Fluid Mechanics (CIVL-320), and either Analytic Geometry & Calculus (MATH-231) or Applied Engineering Mathematics (MATH-234).

CIVL-327—Asphalt and Concrete Laboratory

One Credit Hour

Required of all Civil and Environmental Engineering juniors. Laboratory applications involving design, preparation, curing and testing of asphalt and Portland cement concrete. Includes testing for component properties, component selection and grading, material handling, mix design, blending, applicable standards and specifications, construction practices, quality control, specimen testing and safety. Marshall and Superpave mix design procedures and testing methods are used to conduct laboratory data collection

and analysis. Emphasis is placed on professional laboratory report preparation.

Lecture: Two hours

Prerequisite: Materials Laboratory (CIVL-307); *Co-requisite:* Highway Engineering (CIVL-302).

CIVL-330—Measurements, Analysis and Modeling for CEE Systems

Three Credit Hours

In this course, students are introduced to several concepts and techniques essential to the modern civil engineer: Uncertainty and variability of physical systems; analysis of measurement systems; physical modeling and scaling techniques; mathematical and numerical modeling; and the impact of uncertainty on project economics. Both theory and application are presented with a very strong emphasis placed on hands-on exploration. The course requires students to employ their computer skills acquired in CIVL 210 for many assignments.

Lecture: Three hours

Prerequisite: Computer Application for Civil and Environmental Engineering (CIVL-210).

CIVL-331—Probability and Statistics for Civil and Construction Engineering

Three Credit Hours

This course introduces engineering students to concepts and techniques necessary to organize and analyze technical data. Descriptive statistical measures and probability theory are combined to provide the basis for statistical decision-making techniques applicable to the practice of civil and construction engineering. Topics include data collection and presentation, measures of central tendency; measures of variability; basic probability laws and distributions; sampling theory, confidence intervals, hypothesis testing, analysis of variance, regression analysis, and process control.

Prerequisite: (CIVL-210), minimum sophomore standing, or approval of Dept. Head.

CIVL-402—Geotechnical Engineering Laboratory

One Credit Hour

Required of all Civil and Environmental Engineering seniors. Field and laboratory applications of typical methods for determining engineering properties of cohesive and granular soils. Experimental topics include specific gravity, particle size distribution, clay soil consistency, engineering classification, permeability, compaction, consolidation, *in situ* soil properties, soil boring and sampling techniques, and shear strength parameter determination using unconfined direct, triaxial, vane shear, and penetration apparatus.

Laboratory: Two hours

Prerequisite: Introduction to Geotechnical Engineering I (CIVL-409); *Co-requisite:* Geotechnical Engineering I (CIVL-410).

CIVL-404—Reinforced Concrete Design

Three Credit Hours

Required of all Civil and Environmental Engineering seniors. Design of reinforced concrete structures using strength design theory. Design of beams, columns, combined stress members, footings, and retaining walls. Comprehensive analysis and design of a building frame and foundation system. Special attention is given to the use of current specifications for design and construction. The use of computer programs to facilitate analysis and design during the comprehensive problem is encouraged.

Lecture: Three hours

Prerequisites: Structural Analysis (CIVL-309)

CIVL-406—Steel Design

Three Credit Hours

Required of all Civil and Environmental Engineering seniors. Theory and design of steel structures using the load and resistance factor design method. Design of tension and compression members, beams, and columns. Computer solutions are utilized for design shears, moments, and axial loads.

Lecture: Three hours

Prerequisite: Structural Analysis (CIVL-309).

CIVL-408—Water and Wastewater Systems

Three Credit Hours

Required of all Civil and Environmental Engineering seniors. Introduction to engineering design principles and practices including water use, quality standards for drinking water, water treatment systems, determining the quality of wastewater, design of sanitary sewers, quality criteria for surface waters, and wastewater treatment systems.

Lecture: Three hours

Prerequisites: Introduction to Environmental Engineering (CIVL-322), General Chemistry II/General Chemistry Laboratory II (CHEM-152/162), Analytic Geometry & Calculus (MATH-231), and Applied Engineering Mathematics (MATH-234).

CIVL-409—Introduction to Geotechnical Engineering

Three Credit Hours

Required of all Civil and Environmental Engineering Seniors. Introduces the student to the rudiments of theoretical soil mechanics. Topics include engineering uses of soils, laboratory and field determination of soil properties, determination of phase relationships, engineering soil classification, soil-water interaction and seepage flow mechanics, stress effects of loading on soils at depth, and consolidation, compaction, shear strength, and bearing capacity theory.

Lecture: Three hours

Prerequisites: Mechanics of Materials (CIVL-304) with a grade of "C" or better, Introduction to Environmental Engineering (CIVL-322), Analytic Geometry & Calculus III (MATH-231), and Applied Engineering Mathematics I (MATH-234).

CIVL-410—Geotechnical Engineering II

Three Credit Hours

Required of all Civil and Environmental Engineering seniors. An introductory course in geotechnical analysis and design. Topics include shallow foundations, spread footings, deep foundations, piles and caissons, lateral earth pressure for cohesive and cohesionless soils, slope stability analyses, subsurface investigations, and special topics including such subjects as soil stabilization methods, geotextile applications, liquefaction, etc.

Lecture: Three hours

Prerequisite: Introduction to Geotechnical Engineering (CIVL-409);

Co-requisite: Geotechnical Engineering Laboratory (CIVL-402)

CIVL-411 Engineering Management

Three Credit Hours

Application of management skills, methods, and techniques used to effectively perform engineering, design, and construction projects. Course topics include project scheduling, contract

documents, multidisciplinary teams, public administration, communication, public policy, ethical responsibility, lifelong learning skills, and engineering leadership. Emphasis is placed on professional relationships between government agencies, owners, engineers, and contractors to achieve project requirements and produce engineering deliverables.

Lecture: Three hours

Prerequisite: Completion of all freshman and sophomore courses or approval of the department head.

CIVL-412—Engineering Practice & Professional Licensure

One Credit Hour

Required of all Civil and Environmental Engineering seniors and Construction Engineering seniors. This class provides a review for the NCEES Fundamentals of Engineering Computer Based Exam.

Prerequisite: Senior standing in civil and environmental engineering or construction engineering.

CIVL-416—Modeling Civil Engineering Systems

Three Credit Hours

Modeling the behavior of a wide range of civil engineering systems using various analytical, computer-based, numerical, and experimental techniques. Introducing the concepts of probabilistic modeling using the Monte Carlo Analysis.

Lecture: Three hours

Prerequisites: Completion of required CIVL courses through the junior year or permission of the department head.

CIVL-418—Fluid Mechanics Laboratory

One Credit Hour

Required of all Civil and Environmental Engineering seniors. Accomplishments of laboratory exercises and experiments to illustrate basic concepts of fluid mechanics and to validate empirical formulas used in hydraulic computations. Principal emphasis is on the phenomena associated with closed conduit and open channel flow of water, measurement of velocities, and flow rates and operational characteristics of pumps. A minimum of one experiment will involve the use of the computers to evaluate laboratory data.

Laboratory: Two hours

Prerequisite: Hydrology and Hydraulics (CIVL-321).

CIVL-419—Environmental Engineering Laboratory

One Credit Hour

Required of all Civil and Environmental Engineering seniors. Accomplishment of chemical, physical, and microbiological determinations used in the examination of water and wastewater. Laboratory analysis to evaluate water quality will be performed, such as biochemical oxygen demand, suspended solids, pH, alkalinity, and others. A minimum of one laboratory experiment will involve the use of the computer to evaluate laboratory data.

Laboratory: Two hours

Prerequisite: Water and Wastewater Systems (CIVL-408).

CIVL-421—Subdivision Planning and Design

Three Credit Hours

The elements of planning a subdivision including an introduction to planning, zoning, subdivision requirements, and review procedures; site development including the integrated design of roadways, storm drainage collection/retention/detention systems, sanitary sewer collection and transportation systems (pumping

stations and force mains), potable water systems, and construction cost estimates and specification; and economic analysis with individual student participation in preliminary development of single family, and multifamily projects on 20- to 25-acre tracts of land. Computer applications include use of spreadsheets and CAD. Lecture: Two hours; Laboratory: Two hours

Prerequisites: Hydrology and Hydraulics (CIVL-321), Highway Engineering (CIVL-302); co-requisite: Water and Wastewater (CIVL-408).

CIVL-432—Civil Engineering Design Capstone I

Three Credit Hours

Ethical canons of the engineering profession require civil engineering graduates to be well-rounded effective leaders in planning, design, and construction of public infrastructure and the built environment projects needed to establish safe, healthy, equitable, and vibrant communities. Students apply civil engineering principles to determine appropriate design solutions for a comprehensive engineering problem, using applicable analytical methods of professional practice, to address intradisciplinary projects in civil engineering incorporating structural, environmental, geotechnical, and/or transportation components.

Prerequisites: Senior standing in civil and environmental engineering. Co-requisites: CIVL404, CIVL408, CIVL410, CIVL411

CIVL-433—Civil Engineering Design Capstone II

Three Credit Hours

Ethical canons of the engineering profession require civil engineering graduates to be well-rounded effective leaders in planning, design, and construction of public infrastructure and the built environment projects needed to establish safe, healthy, equitable, and vibrant communities. Students apply civil engineering principles to determine appropriate design solutions for a comprehensive engineering problem, using applicable analytical methods of professional practice, to address intradisciplinary projects in civil engineering incorporating structural, environmental, geotechnical, and/or transportation components.

Prerequisites: CIVL432

CIVL-450—Civil and Environmental Engineering Internship

Three Credit Hours

This course gives Civil and Environmental Engineering students real-world experience to complement the classroom education that they have previously received. Interns will learn about the variety of issues facing today's practicing engineer. Interns will spend at least five hours each week working alongside senior-level managers in Charleston area engineering firms or engineering-related regulatory agencies coordinating these activities through the Department of Civil and Environmental Engineering.

Prerequisite: Permission of Department Head.

CIVL-453—Special Topics in Civil Engineering

Three Credit Hours

Selected topics in civil engineering. The offering of this course will depend upon the interest of the student, the availability of an instructor, and the approval of the department Head. Since the content of the course may change, a student may repeat the course for credit with consent of the department head.

Prerequisite: Permission of the Department Head

Construction Engineering (CONE)

CONE-302—Engineering/Construction Law, Ethics Safety and Contracts

Four Credit Hours

Introduction to basic contract and tort issues and their application in the construction industry; delineation of the various types of contracts and remedies available to parties involved in a construction project; additional related topics including bidding, delays, mechanics liens, site conditions, warranties and the Uniform Commercial Code as it relates to the construction industry. Examine the application of OSHA 29CFR 1926 for the construction industry along with applicable state and federal construction safety laws pertaining to construction, altercations, or repair work at construction site.

CONE-311—Resource Estimating

Three Credit Hours

Systems approach to determining required quantities of construction materials; quantification of various types of foundation systems, structural systems and building envelope systems using excerpts of contract documents from a variety of different building projects.

CONE-312—Advanced Estimating

Three Credit Hours

Quantification and pricing of direct field costs and general condition costs from construction documents; the preparation of complete lump sum bid package ready for project execution; utilization of entire set of required contract documents.

CONE-320—Engineering Materials and Methods w/ Lab

Three Credit Hours

Quantification and pricing of direct field costs and general condition costs from construction documents; the preparation of complete lump sum bid package ready for project execution; utilization of entire set of required contract documents.

Prerequisite: CHE-151 *Corequisite:* CIVL-304

CONE-330—Quality Management and Labor Relations

Three Credit Hours

Identify, explain and apply quality management techniques for construction engineering services, construction projects, and related deliverables through use of continuous improvement procedures, analytical tools and techniques focusing on resource allocation, workforce requirements, performance schedule, quality control, and total quality systems. Best practice principles in labor relations and management will be reviewed and evaluated including labor relations law, construction contracts, incentives and penalties, construction agreements and partnerships, collective bargaining, and unionized/nonunionized construction workforce considerations.

CONE-340—Structural Analysis and Design

Four Credit Hours

Application of statics and strength of materials for construction of steel buildings, reinforced concrete structures, reinforced masonry structures, and timber structures with computer analysis and design of specific topics.

Prerequisite: CIVL-304

CONE-350—Commercial Construction and Engineering Equipment

Three Credit Hours

Prepare students to enter the commercial construction sector through consideration of design, bidding/estimating, value engineering, contracts/negotiation, subcontractor relations, cost controls, management during construction, close out, post-construction requirements and the engineering equipment used during horizontal and vertical construction.

Corequisite: CIVL-311

CONE-360— Soils and Foundations w/Lab

Three Credit Hours

Introduction to soil types found on construction projects; testing, properties and classification of soil; embankment control, dewatering, excavation, foundations, piers, and pilings.

Corequisite: CIVL-304

CONE-410—Project Scheduling

Three Credit Hours

An introduction to construction project scheduling covering concepts of project selection and scheduling, utilizing the estimate to predict the schedule, scheduling subcontracting, cost controls, project documentation, construction bonds, insurance, payments and the elements of close out.

Prerequisite: CIVL-311

CONE-412—Engineering Practice and Professional Licensure for Construction Engineers

One Credit Hour

Required of all Construction Engineering seniors. This class provides a review for the NCEES Fundamentals of Engineering Computer Based Exam.

Prerequisite: Senior standing in Construction Engineering.

CONE-415—Project Management and Engineering Administration

Three Credit Hours

Project planning, cost controls, and construction related financial documents including: schedule of values, labor and operations cost reports, income statements, balance sheets and construction budgets; emphasis on the development of techniques required to ethically and effectively monitor the financial aspects of a construction project and manage engineering projects.

Prerequisites: BADM-202, BADM-211

CONE-440—Construction Methods and Temporary Structural Design

Three Credit Hours

Common construction methods are introduced and building details are explored considering material applications and detailing in structural and non- structural building components and physical processes lying behind the design of a building's envelope and interior. A set of prints and specifications will structure our discussion of the building process. Study of the materials, methods and techniques associated with temporary structures utilized in various construction operations, such as concrete formwork, scaffolding, falsework/shoring, cofferdams, underpinning, diaphragm/slurry walls, earth-retaining structures and construction dewatering systems.

Prerequisite: CONE-340

CONE-450—Facilities Operations and Maintenance (BIM)

Three Credit Hours

Each facility has distinct operations, maintenance and capital project delivery needs. Leaders must leverage facility data created throughout the design and construction process and lifecycle to provide safe, healthy, effective and efficient work environments for their clients. The maintenance of this data will create greater efficiencies such as: having accurate as-built information to reduce the cost & time required for renovations; increasing customer satisfaction; and optimizing the operation and maintenance of our building systems to reduce energy usage. Building Information Modelling (BIM) is about ensuring teams have the relevant knowledge and capabilities to achieve best practice and effectively manage information across all stages of your construction projects.

CONE-460—Mechanical and Electrical Systems

Three Credit Hours

Mechanical and electrical systems with a major emphasis on the estimate and installation, design and control of the electrical, heating, ventilation and cooling system, site planning and acoustical treatments.

Prerequisites: PHYS-211/PHYS-277

CONE-470—Production Processes and Rapid Product Development w/Lab

Three Credit Hours

This course is an introduction to manufacturing processes and manufacturing systems including assembly, machining, injection molding, casting, thermoforming, and more. Emphasis on the physics and randomness and how they influence quality, rate, cost, and flexibility. Attention to the relationship between the process and the system, and the process and part design. Project (in small groups) requires fabrication (and some design) of a product using several different processes.

Prerequisite: CONE-311

CONE-481—Construction Engineering Design Capstone I

Three Credit Hours

This course is the first in the Construction Engineering Design Capstone series and provides project definition, project planning, scheduling, and results in development of a feasible plan and presentation for a 35% complete major construction project, for selected or assigned project.

Prerequisite: Senior standing in construction engineering

Corequisites: CONE-410, CONE-440

CONE-482—Construction Engineering Design Capstone II

Three Credit Hours

This course is the second in the Construction Engineering Design Capstone series that requires 3D modeling, quantity estimating, scheduling, risk analysis, preparation of project construction deliverables, and presentation of results for a major infrastructure or private development construction project as assigned, or approved, addressing design-build requirements. Use information from all previous courses to prepare construction engineering documents for a given project. Respond to project solicitations, Request for Proposal (RFP) announcements, or bid, and project addendums.

Prerequisite: CONE-481

Criminal Justice (CRMJ)

CRMJ-201—Introduction to Criminal Justice

Three Credit Hours.

Prerequisite for all criminal justice courses (CRMJ-370-499) except CRMJ-202 for non-departmental majors. An introduction to the American criminal justice system, including the history and philosophy of law enforcement, the nature of crime in the United States, an introduction to the substantive criminal law, the nature and theory of the criminal justice process from arrest to corrections, and the roles of the major actors in that process (police, prosecutors, defense lawyers, judges, and corrections personnel).

CRMJ-202—Criminology

Three Credit Hours

A study of the theories that seek to explain criminal behavior.

CRMJ-330—Emergency Management

Three Credit Hours

This course examines the history and perspectives of the field, hazards concepts and taxonomies, all-hazards approach, phases of emergency management, risk assessment, risk communication, emergency management functions, sustainable development, best practices, the model EOC, the written and implemented disaster plan, attaining the CEM, IAEM, and forging intra- and inter-government relationships.

CRMJ-331—Cyber Investigations

Three Credit Hours

This course will introduce the student to the best practices for seizing and securing digital evidence and the complicated legal issues surrounding digital evidence within the area of Cyber-Crime Investigation to include Cyber-Terrorism. The course will cover evidence and issues relative to file Meta-data for various types of electronic devices such as computer networks, cell phones, and electronics storage. Searches justified by exigent circumstances, search incident to arrest, and search warrant issues will also be covered. This course provides students interested in improving their investigative knowledge with an understanding of identifying, quantifying/qualifying, seizing, and protecting electronic information.

The investigative process is studied from basic theoretical concepts to the application of the basic elements for prosecution of criminal cases. Included are several studies of electronic crime scene investigation, white collar crime, organized crime, and cyber-terrorism. While this class focuses on cyber investigation practices and procedures in the United States, it offers a global perspective and will incorporate examples from different parts of the world.

CRMJ-332—Comparative Homeland Security

Three Credit Hours

The term “homeland security” is a relatively recent addition to the policy and scholarly landscape. Having gained prominence after the terrorist attacks of 11 September 2001, the term is often assumed to be synonymous with the work of the US Department of Homeland Security (DHS) – itself a post-911 amalgamation of several federal agencies. The course critically reviews the rise of homeland security as a policy and scholarly concern after 911 and describes and explains homeland security policies, in the US and abroad, by considering their international attributes and by

undertaking cross-national and cross-temporal analyses. The course is inter-disciplinary and draws on a range of fields within the social sciences. Students will be encouraged to integrate theory and evidence towards stronger analyses.

CRMJ-333—Immigration and Security

Three Credit Hours

Immigration is defined as crossing the border of one of the world's 220 nation states with the intent to stay. Technological improvements in the last 50 years have given rise to massive outflows of people from sending countries and have tested the capacity of receiving countries to absorb immigrants. This course examines security issues such as terrorism that might stem from countries' inability to control borders and the separate issue of societal security. Special emphasis is given to Mexican immigration to the US.

CRMJ-370—Police Systems & Practices

Three Credit Hours

An introduction to law enforcement in the United States, including a brief history of policing, contemporary trends in criminality, and current issues facing police administrators. Attention will also be given to the Fourth, Fifth, and Sixth Amendments to the U.S. Constitution and their implications for law enforcement.

Prerequisite: CRMJ-201

CRMJ-371—Criminal Law

Three Credit Hours

This course examines the origin and general principles of criminal law, principles of criminal liability, and elements of offenses.

Prerequisite: CRMJ-201

CRMJ-372—Critical Issues in Law Enforcement

Three Credit Hours

A critical analysis of contemporary issues in the law enforcement community, including the following: police stress, use of deadly force, police brutality, corruption, unionization, substance abuse by police officers, and other issues currently confronting law enforcement administrators and policymakers.

Prerequisite: CRMJ-201

CRMJ-373—Criminal Evidence

Three Credit Hours

An introduction to the types of evidence, collection of evidence, the chain of custody, and procedures relating to its introduction into judicial proceedings. Special attention is given to Fourth Amendment constitutional issues.

Prerequisite: CRMJ-201

CRMJ-375—Criminal Justice Agency Administration

Three Credit Hours

An introduction to criminal justice agency administration, including the following: the nature of criminal justice organizations, criminal justice personnel, group behavior in criminal justice organizations, and processes in criminal justice organizations.

Prerequisite: CRMJ-201

CRMJ-380—Corrections

Three Credit Hours

An introduction to corrections, correctional theory, and correction policy through the in-depth study of key areas in corrections, including correctional history, systems, policy, treatment programs, prison life, community-based corrections.

Prerequisite: CRMJ-201

CRMJ-381—Organized Crime

Three Credit Hours

An examination and analysis of organized crime, of controversies surrounding the phenomenon, and of efforts aimed at its control. Attention will be given to defining organized crime, to its development, and to various theories that seek to explain its existence. Other topics include the activities that constitute the business of organized crime, the relationship between organized crime and corruption of governmental officials, and the techniques used to control it.

Prerequisite: CRMJ-201

CRMJ-382—Drugs and Crime

Three Credit Hours

An examination of drug use as it relates to addiction, social problems, crime, enforcement, and treatment. Issues involving domestic and international drug supply, demand, trafficking, and interdiction are studied.

Prerequisite: CRMJ-201

CRMJ-383—Comparative Criminal Justice Systems

Three Credit Hours

An examination of the ideology, structure, and justice process of various criminal justice systems in the United States, Europe, Asia, Africa, the Middle East, and Latin America. The comparative study involves analysis of diverse social control, legal, police, court, correction, and juvenile systems from representative justice approaches around the world.

Prerequisite: CRMJ-201

CRMJ 384—International Crime

Three Credit Hours

A study of transnational crime, criminals, and criminal organizations in a global context including an examination of international and national organizations, laws, and justice practices responsible for controlling multi-national criminal activity.

Prerequisite: CRMJ-201

CRMJ-385—Juvenile Delinquency

Three Credit Hours

An introduction to delinquency, to the juvenile justice process from intake to disposition, to trends in the treatment of juvenile offenders, and to juvenile justice reform (decriminalization, diversion, deinstitutionalization, and due process).

Prerequisite: CRMJ-201

CRMJ-386—Research Methods in Criminal Justice

Three Credit Hours

An introduction to research and to statistical methods, data bases, and computer applications in relation to the various fields of criminal justice. Special attention will be given to the problems associated with collection and analysis of criminal justice data.

Prerequisite: CRMJ-201

CRMJ-387—Criminal Investigation

Three Credit Hours

An examination of the criminal investigation process that combines forensic applications with investigative procedures. Crime scene preservation, management, evidence collection, and process are included in the examination of the investigative process. Interrogation and interviewing techniques, as well as physical evidence used to investigate specific types of offenses, are studied.

Prerequisite: CRMJ-201

CRMJ-388—White Collar Crime

Three Credit Hours

A study of “white collar” crime as a specific type of deviance. The course explores aspects of organizational, corporate, occupational, and governmental criminality and its detection, investigation, prosecution, and punishment.

Prerequisite: CRMJ-201

CRMJ-389—Justice in Latin America

Three Credit Hours

Latin American countries have criminal justice institutions based on fundamental principles similar to those of US criminal justice institutions: due process, substantive criminal and criminal procedural law, basic organization into police, courts and corrections sectors, written constitutions, etc. Yet Latin American criminal justice institutions often in practice function very differently from those in the US. This course presents case studies on Latin American criminal justice institutions with topics including police reform in Bolivia; use of the National Guard in counter-narcotics in Puerto Rico; judicial police reform in Mexico; prosecutorial reform in Guatemala; and others.

CRMJ-390—Victimology

Three Credit Hours

The scientific study of the extent, nature, and causes of criminal victimization, its consequences for the persons involved and the reactions to such victimization by society, in particular the police and the criminal justice system. Additional areas of examination include history of victimology, legal recourse for crime, victims, and informal methods of addressing the needs of victims.

Prerequisite: CRMJ-201

CRMJ-391—Criminalistics

Three Credit Hours

The application of science to the investigation of crime. Designed to acquaint non-science majors with the philosophy and methodology of dealing with physical evidence in criminal investigation.

Prerequisite: CRMJ-201

CRMJ-392—Computer Crime

Three Credit Hours

An exploration of the current state of computer crime in the United States. The course traces the history of technological crime and identifies areas ripe for exploitation from technology savvy deviants. It also evaluates forensic practices and software in light of government legislation together with an analysis of emerging case law. The course also addresses guidelines for the development of computer forensic laboratories, the creation of computer crime task forces, and the search and seizure of electronic equipment.

Prerequisite: CRMJ-201

CRMJ-393—Homicide

Three Credit Hours

This course is designed to teach students about the law enforcement, statistical, legal and psychological elements of homicide in the United States. Throughout the course we will explore theories and explanation for homicide, traditional murder, children/women who kill, and multiple victim killers. At the end of the semester, students will be responsible for teaching the class about an infamous serial killer.

CRMJ-465—Special Topics in Criminal Justice

Three Credit Hours

An advanced seminar designed to examine in-depth selected topics in criminal justice.

Prerequisite: CRMJ-201

CRMJ-470—Ethics

Three Credit Hours

This course seeks to examine the criminal justice system through an ethical lens, to identify ethical issues in practice and in theory, to explore ethical dilemmas, and to suggest how ethical issues and dilemmas faced by criminal justice professionals might be resolved.

CRMJ-471—Psychology of Crime

Three Credit Hours

This course examines the role of psychology in contributing to our understanding of criminal behavior and criminal justice system processes. The course will review our current understanding of the criminal mind and the psychological explanations associated with the commission of violent crime, homicide, sexual assault, multiple murder, terrorism, property crime, and substance abuse. The course takes a close look at developmental risk factors and the biological origins of criminal behavior. Toward the end of the semester, the course discusses the use of psychological principles in police interrogations, the court process, and correctional psychology.

CRMJ-472—Crime Prevention

Three Credit Hours

This course will examine how to prevent crime from humanistic, structural, situational and environmental perspectives. A basic introduction to each of these schools of thought will be given. The main focus of this course will be examining the empirical research surrounding each method.

CRMJ-498—Independent Study

Three Credit Hours

An independent research project resulting in a formal paper, this study must be approved by the department head in consultation with an appropriate member of the faculty who will supervise the project. Virtually any aspect of criminal justice may be investigated. Especially recommended for those considering graduate or professional study.

Prerequisite: As determined by instructor, CRMJ-201

CRMJ-499—Internship

Three Credit Hours

Internships with government and other agencies are offered to combine academic training with professional experience.

Prerequisite: Permission of director of internships, CRMJ-201

Education (EDUC)

EDUC-101—Education in Modern Society

Three Credit Hours

Open to any interested student. An orientation to teaching as a profession and to the teacher-training program. Study and discussion on school organization and teachers' roles and responsibilities; personal and professional guidance. Introduction to the learner-centered conceptual base of the department. A field experience component of ten hours is required.

EDUC-202—Educational Psychology

Three Credit Hours

This course focuses on the dynamics of human learning and the psychological principles that serve as the foundation for educational practice. The general goal is to introduce students to the field of educational psychology and to teach them how to apply the concepts, theoretical principles, and research findings from the discipline of psychology to the planning and implementation of effective instructional strategies in the classroom. Major emphasis is placed on assisting the student in gaining a functional knowledge of the ideas explored. Moreover, through this course the college student who is preparing for employment in the field of education is acquainted with many facets of the teacher's role as a decision maker in the teaching/learning process. Class discussions, activities, and a ten-hour field experience component focus on the connections between theory and practice and provide students with opportunities to apply psychological principles and solve practical problems.

EDUC-206—Adolescent Development

Three Credit Hours

A survey of the basic principles and theories of human development with a focus on adolescents and their educational processes. The ten-hour field experience component is designed to interrelate college classroom learning with public school observations and activities.

EDUC-301—Foundations in Reading

Three Credit Hours

A foundational course designed to develop competencies in teaching literacy skills. The content of this course examines the theoretical research and historical perspectives as related to reading education. Five components of a balanced literacy program will be examined and these components are based on research of the National Reading Panel. Approaches to reading will be examined as phonics; sight; linguistic; language experience approach; and the VAKT. Literacy educators and pioneers in reading education as Chall, Flesch, Fries, Allen, and Fernald will be discussed to provide background information from a historical perspective to assure that students will have a knowledge of foundations. A field experience component of ten hours is required.

EDUC-306—Teaching Reading and Writing in the Middle and High School

Three Credit Hours

Three Credit Hours

Designed to acquaint prospective middle school and high school teachers with reading practices geared to their students. The course will include a broad survey of the field of reading with attention given to some diagnostic procedures and the development of

Reading Across the Curriculum programs for the middle school and high school levels. Different subject areas will be considered. Ten hours of field experiences in a public school are required.

Prerequisites: Admission to Upper Level Study

EDUC-312—Learners with Exceptionalities

Three Credit Hours

Learners with exceptionalities is designed to prepare prospective teachers to define and identify characteristics of students with exceptionalities and students at risk for school failure. Students will learn how to modify teaching methods and classroom management strategies to address the academic, social and emotional, and cognitive differences of students with special needs. *Learners with exceptionalities* is based on the premise that it is the teacher's responsibility to meet the needs of every learner, typical or atypical. A field experience component of ten hours in the school is required.

EDUC-401—Methods and Materials of Middle and High School Teaching

Three Credit Hours

Study of the aims, methods, and materials employed in middle and high school teaching; organization of subject matter; motivation and direction of learning; development of attitudes, appreciations, and ideals; classroom presentation of formal materials. The utilization of technology and the development and use of evaluative instruments in the total teaching-learning process will be emphasized. A field experience component of 20 hours is required.

EDUC-402—Special Methods in Teaching

Three Credit Hours

Special techniques, theories, and materials in teaching in the content area of specialization in middle school (grades 5-8) and high school (grades 9-12). A field experience component of 20 hours is required.

Prerequisites: Admission to Upper Level Study

EDUC-499—Internship in Teaching

Twelve Credit Hours

A requirement for certification, observation and teaching in approved schools under approved supervising teachers, supervision by college instructor. Assignment only in major teaching field. This internship is a minimum of twelve weeks and contains a weekly seminar. All students provide their own transportation. Formal application for admission to the internship is required.

Prerequisites: Refer to requirements for admission to internship.

Electrical Engineering (ELEC)

ELEC-106—Fundamentals of Electrical Engineering

Three Credit Hours

Required of electrical engineering freshmen.

An introduction to the engineering profession, branches and functions of engineering, professional ethics, and the role of engineers in society. Fundamentals of engineering problem solving and the use of calculators and computers as tools to aid in problem solving. Includes subject areas common to most engineering disciplines such as the introduction to the engineering design process and teamwork through a design project, engineering laboratory skills, report writing, and engineering economics, but

through the use of electrical engineering exemplars.

Lecture: Three hours

ELEC-201—Electric Circuit Analysis I

Three Credit Hours

Required of electrical engineering sophomores. Circuit elements; Kirchhoff's and Ohm's Law and their application through a variety of circuit analysis techniques; operational amplifiers; and the transient response of simple circuits. The circuit analysis program SPICE is introduced.

Corequisites: MATH-131, PHYS-221/271

ELEC-202—Electric Circuit Analysis II

Three Credit Hours

Required of electrical engineering sophomores. Sinusoidal analysis and phasors; AC power; three-phase circuits; frequency response of simple circuits; the use of SPICE for ac circuit analysis.

Lecture: Three hours

Prerequisites: ELEC-201 with a grade of C or better or the successful completion of both ELEC-208 and ELEC-204 with grades of C or better. *Co-requisites:* MATH-132, PHYS-222/272

ELEC-204—Electrical Laboratory

One Credit Hour

Required of electrical engineering sophomores. An introduction to the experimental method in electrical engineering. Laboratory exercises are designed to supplement the material presented in ELEC-201 and ELEC-202.

Laboratory: Two hours

Prerequisites or co-requisite: Electric Circuit Analysis II (ELEC-202) or Elements of Electrical Engineering (ELEC-308)

ELEC-206—Computer Applications for Electrical Engineers

Three Credit Hours

Required of electrical engineering sophomores. The computer is presented as a tool for the solution of engineering problems. High level programming of computers; data manipulation, data plotting, and equation solving using application programs such as MATLAB.

Lecture: Three hours

ELEC 208 Principles of Electrical Engineering

Three Credit Hours

This course in electrical engineering for non-electrical engineering majors provides a foundation in basic circuit theory and analysis, power in circuits, and analog electronics. Theories and concepts presented in the course are illustrated through lectures, practical applications, and laboratory work.

Prerequisite or co-requisite: MATH 131; consent of department head is required for electrical engineering majors.

Lecture: Two hours; Laboratory: Two hours

ELEC-302—Electrical Machinery Laboratory

One Credit Hour

Required of electrical engineering juniors. A laboratory course to accompany ELEC-316.

Laboratory: Two hours

Prerequisite or co-requisite: Electromechanical Energy Conversion (ELEC-316)

ELEC-306—Electronics I

Three Credit Hours

Required of all electrical engineering juniors. Characteristics of solid-state devices, theory and design of low-frequency amplifiers, transistor biasing and stabilization, design of multistage and feedback amplifiers utilizing bipolar and MOS devices.

Lecture: Three hours

Prerequisites: Electric Circuit Analysis II (ELEC-202), Electrical Laboratory (ELEC-204); *Co-requisite:* Electronics Laboratory (ELEC-313).

ELEC 307—Nuclear Engineering

Three Credit Hours

An introduction to the theory and application of nuclear energy. Topics include fission and the chain reaction; nuclear fuels; nuclear reactor principles, concepts, examples, construction, operation, and ecological impact; radiation hazards and shielding; and nuclear propulsion.

Lecture: Three hours

Prerequisites: Physics with Calculus II/Laboratory for Physics with Calculus II (PHYS-222/272).

ELEC-308—Elements of Electrical Engineering

Three Credit Hours

Fundamental electrical concepts and units; basic laws of electrical circuits; equivalent circuits; DC and steady-state AC circuit analysis; and effective current, average power, and three-phase power.

Lecture: Three hours

Prerequisite: Analytic Geometry and Calculus I (MATH-131).

ELEC-309—Signals and Systems

Three Credit Hours

Required of electrical engineering juniors. The study of continuous and discrete systems utilizing Laplace, Fourier, and z-transform theory.

Lecture: Three hours

Prerequisites: Electric Circuit Analysis (ELEC-202), Electrical Laboratory (ELEC-204), Computer Applications for Electrical Engineers (ELEC-206).

ELEC-311—Digital Logic and Circuits

Three Credit Hours

Required of electrical engineering juniors. Introduction to Boolean algebra; topics such as digital data coding and digital arithmetic. Design of combinational and sequential circuits; design implementing and testing of digital circuits using Field Programmable Gate Arrays. Employs VHDL and other industry standard design tools.

Lecture: Three hours

ELEC-312—Systems I

Three Credit Hours

Required of electrical engineering juniors. An introduction to feedback control systems, system representation, stability, root-locus and frequency response, and compensation.

Lecture: Three hours

Prerequisites: Signals and Systems (ELEC-309)

ELEC-313—Electronics Laboratory

One Credit Hour

Required of electrical engineering juniors. Experimental studies

coordinated with the subjects introduced in ELEC-306.

Laboratory: Two hours

Prerequisite: Electrical Laboratory (ELEC 204).

Corequisite: Electronics I (ELEC-306).

ELEC-316—Electromechanical Energy Conversion

Three Credit Hours

Required of electrical engineering juniors.

Analysis of transformers; fundamentals of electromechanical energy conversion; and study of DC, induction, and synchronous machines.

Lecture: Three hours

Prerequisite: Signals and Systems (ELEC-309), or consent of the department head; *Prerequisite or Co-requisite:* Electrical Machinery Laboratory (ELEC-302).

ELEC-318—Electromagnetic Fields

Three Credit Hours

Required of electrical engineering juniors.

Static electric and magnetic fields; Maxwell's equations and their applications; Laplace's equations; boundary value problems; time varying fields, and plane waves.

Lecture: Three hours.

Prerequisites: Electric Circuit Analysis (ELEC-202), Physics with Calculus II/Laboratory for Physics with Calculus II (PHYS-222/272).

Prerequisite or co-requisite: Applied Engineering Mathematics II (MATH-335).

ELEC-330—Digital Systems Engineering

Three Credit Hours

Required of electrical engineering sophomores.

Microcontroller fundamentals including architecture, assembly language programming, and interfacing. Applications of industry-standard microcontrollers in embedded systems. Employs software design tools, simulators, and hardware trainers.

Lecture: Three hours

Prerequisite: Digital Logic and Circuits (ELEC-311).

ELEC-401—Electronics II

Three Credit Hours

Characteristics and applications of analog and digital circuits. Topics may include differential amplifiers, multistage amplifiers, power amplifiers, oscillators, filter circuits, and CMOS digital logic.

Prerequisite: Electronics I (ELEC-306), and Electronics Laboratory (ELEC-313).

ELEC-403—Electric Power Systems

Three Credit Hours

A study of electrical power generation, transmission, and distribution; symmetrical components, per-unit analysis, calculation of transmission-line parameters, and load flow.

Lecture: Three hours.

Prerequisites: Electromechanical Energy Conversion (ELEC-316),

Prerequisites or co-requisite: Electromagnetic Fields (ELEC-318).

ELEC-405—Electrical Measurements

Three Credit Hours

An introduction to modern electrical instrumentation and measurements. Topics include: measurement theory, analog and

digital signal conditioning, noise, transducers, instrumentation system design, digital interfaces, and computer based instrumentation and measurements.

Lecture: Three hours

Prerequisite: Electronics Laboratory (ELEC-313).

ELEC-407—Systems II

Three Credit Hours

A continuation of Systems I with primary emphasis on digital control systems. Topics include: state-variable analysis, simulation techniques, controllability, state-variable feedback, observability, and state estimator design.

Lecture: Three hours

Prerequisite: Systems I (ELEC-312).

ELEC-412—Applied Probability and Statistics for Engineers

Three Credit Hours

Required for electrical engineering majors.

Application of the theory of probability and statistics in modeling random phenomena and signals; in the calculation of system responses; and in making estimates, inferences and decisions in the presence of chance and uncertainty. Applications will be studied in areas such as communications, power systems, device modeling, measurements, reliability, and quality control.

Lecture: Three hours

Prerequisites: Analytic Geometry and Calculus III (MATH-231), Computer Applications for Electrical Engineers (ELEC-206).

ELEC 413—Advanced Topics in Electrical Engineering

Three Credit Hours

Advanced topics in electrical engineering. Offered occasionally when the special interests of students and faculty coincide. The syllabus must be approved by the Electrical Engineering Faculty. Since the content of the course may change, a student may repeat this course for credit with the permission of the department head.

Lecture: Three hours

ELEC-414—System Simulation

Three Credit Hours

An introduction to system concepts, mathematical models of systems, and simulation methods applied to a broad range of systems. Design project required.

Lecture: Three hours

Prerequisite: Systems (ELEC-312).

ELEC-416—Communications Engineering

Three Credit Hours

Principles of amplitude, frequency, and pulse modulation; signal flow and processing in communications systems; and analog and digital communication systems.

Lecture: Three hours

Prerequisites: Signals and Systems (ELEC-309) and Digital Logic and Circuits (ELEC-311), *Corequisite:* Electronics I (ELEC-306)

ELEC-418—Advanced Digital Systems

Three Credit Hours

Experience in advanced digital design techniques and exposure to the development tools used in the design of advanced digital systems. Topics include the design of digital systems using VHDL, industry standard FPGA devices and software, and microprocessor hardware components.

Lecture: Three hours

Prerequisite or co-requisite: Digital Systems Engineering (ELEC-330) or Computer Organization and Programming (CSCI-305).

ELEC-419—Computer Network Architecture

Three Credit Hours

This course will cover network architecture and protocols. Included are transmission technologies, encoding/decoding schemes, packet switching, frame relay, ISDN, ATM and performance modeling techniques.

Lecture: Three hours

ELEC-421—Design I

Three Credit Hours

Required of electrical engineering seniors.

Initiation, design, scheduling, documentation and reporting on a major design project. Normally accomplished by students working in small groups. All students will make written and oral presentations on their contribution to the project. Financial, legal, ethical, societal, regulatory, environmental, manufacturability, and quality issues will be discussed and will constrain the designs as appropriate.

Lecture: One hour; Laboratory: Four hours.

Prerequisites: Electrical Machinery Laboratory (ELEC-302), Electronics I (ELEC-306), Systems I (ELEC-312), Electronics Lab (ELEC 313), Electromechanical Energy Conversion (ELEC-316), Digital Systems Engineering (ELEC-330) and Electromagnetic Fields (ELEC-318) or consent of the department head.

ELEC-422—Design II

Three Credit Hours

Required of all electrical engineering seniors. Continuation of the major design project begun in ELEC-421. Project implementation, documentation, and reporting. Normally to be accomplished by students working in the small groups formed in ELEC-421. The impact of the practical, societal, and governmental issues raised in ELEC-421 will be assessed. Each student will make written and oral presentations on their contributions to the project. A prototype demonstration and presentation of final results in a symposium format is required.

Lecture: One hour; Laboratory: Four hours

Prerequisite: Design I (ELEC-421) taken the preceding semester.

ELEC-423—Digital Signal Processing

Three Credit Hours

Introduction to the characteristics, design, and applications of discrete time systems using digital signal processors. Discrete time Fourier Transforms, FIR and IIR systems, and the design of FIR and IIR filters.

Lecture: Three hours

Prerequisite: Signals and Systems (ELEC-309), and Digital Systems Engineering (ELEC-330).

ELEC-424—Solid-State Devices

Three Credit Hours

Basic principles governing the operation of solid-state devices are developed from fundamental concepts. P-N junction theory is developed and applied to the analysis of devices such as bipolar transistors, solar cells, detectors, and photo devices. The theory of field-effect devices is developed.

Lecture: Three hours

Prerequisites: Physics with Calculus II/Laboratory for Physics with

Calculus II (PHYS-222/272), Applied Engineering Mathematics I (MATH-234), and Electronics I (ELEC-306).

ELEC-425—Interference Control in Electronics

Three Credit Hours

An introduction to the control and measurement of interference between electronic devices. Analysis methods and practical design techniques to minimize both radiated and conducted emissions and susceptibility. Enhancing signal integrity in high-speed circuits and reducing crosstalk. Laboratory exercises and demonstrations will be used to reinforce the material.

Lecture: Three hours

Prerequisites: Signals and Systems (ELEC-309) and Electromagnetic Fields (ELEC-318).

ELEC-426—Antennas and Propagation

Three Credit Hours

Transmission, radiation, and propagation of electromagnetic waves by means of transmission lines, waveguides, optical fibers, and antennas. Design project required.

Lecture: Three hours

Prerequisites: Electromagnetic Fields (ELEC-318).

ELEC-427—Energy Systems Engineering

Three Credit Hours

An overview of current and emerging methods of energy conversion used to generate electricity and to support all methods of transportation. This basic look includes study of the thermodynamics, chemistry, flow and transport processes that apply to energy conversion with emphasis on sustainability, efficiency, environmental impact and performance. Systems utilizing fossil fuels, nuclear and renewable resources are studied. Study of energy storage and transmission is included as required to assess both stationary power generation and transportation energy needs.

Lecture: Three hours

Prerequisites: MATH 131 and PHYS 221/271

ELEC-428—Computer Architecture

Three Credit Hours

Organization and design of computer system hardware. Provides the basic knowledge required for understanding and designing standard and advanced computer architectures. Topics include: instruction set architectures, ALU design and computer arithmetic, memory organization, cache and virtual memories, controller design, pipelining, and parallelism.

Lecture: Three hours

Prerequisite: Digital Systems Engineering (ELEC 330).

ELEC-430—Independent Research in Electrical Engineering

Three Credit Hours

This course may be taken by a student wishing to engage in research of mutual interest to the student and to the faculty advisor who directs the study. The student is required to; define a problem, conduct a review of relevant literature, develop an original solution to the problem, perform analysis and design as necessary, and perform experiments or simulations to evaluate the solution. The student is required to consult the faculty advisor in-person at least once per week. The study will culminate in a formal written report, formatted in the style of a published conference-proceedings paper.

Prerequisites: Junior or senior standing, and department head approval.

ELEC-450—Electrical Engineering Internship

Three Credit Hours

The student on an individual basis, pursues advanced understanding by working for an electrical engineering company. The scope of the activities is tailored to the educational focus of the student in consultation with his faculty advisor and the supervisor of the company. The student is required to provide weekly journaling, monthly supervisor evaluations, a final presentation, and a final report on individual work accomplished.

Evening Undergraduate Studies (EUGS)

EUGS-101—Introduction to The Citadel Experience

One Credit Hour

This online course is required of all Evening Undergraduate Studies (EUGS) students and must be taken in their first semester enrolled at The Citadel. The course covers a wide range of activities and services on campus, and offers insight into academic proficiency through the use of self-administered assessment tools. The course also provides an overview of The Citadel's three core values of honor, duty, and respect.

Prerequisites: none

Intelligence (INTL)

INTL-201—Introduction to Intelligence

Three Credit Hours

This course is a broad overview of the intelligence gathering and analysis as practiced by agencies of the United States government, to include its purpose, history, and potential benefits. The organizational makeup of the U.S. Intelligence Community (IC); the laws guidelines and ethics pertaining to intelligence collection; and employment/internship possibilities in the IC will also be presented. Finally, students will be given an introduction to analytical procedures and writing/briefing for policymakers.

INTL-210—Homeland Security

Three Credit Hours

An introduction to various aspects of terrorism and homeland security as both affect the United States today. Much of the focus will be the problems and challenges stemming from 9/11 that create today's world situation. To understand what is going on currently, the course will examine the historical context of both terrorism and national security as it relates to terrorism.

INTL-301—Advanced Analytics I

Three Credit Hours

Students learn about the challenges inherent in analytics and methodologies used to overcome biases and present findings in a meaningful way. The course is designed to acquaint students with methods to maximize analytical rigor and provide policymakers with the intelligence necessary for them to make decisions under conditions of uncertainty and ambiguity. Emphasis is placed on working through case studies and developing writing and briefing skills.

Prerequisite: INTL 201 or permission of Instructor

INTL-302 Advanced Analytics II

Three Credit Hours

Students continue to learn about the challenges inherent in analytics and methodologies used to overcome biases and present findings in a meaningful way. The course is designed to acquaint students with methods to maximize analytical rigor and provide policymakers with the intelligence necessary for them to make decisions under conditions of uncertainty and ambiguity. Emphasis is placed on working through case studies and developing writing and briefing skills.

Prerequisite: INTL 301 or permission of Instructor

INTL-310—Intelligence Collection Systems and Programs

Three Credit Hours

This is a seminar course addressing intelligence collection systems and programs. Particular emphasis will be placed on intelligence collection platforms, their limitations and capabilities, and how they are used in support of national intelligence requirements. The course will also focus on how these systems and programs are planned and executed. The seminar format will emphasize student participation in the form of presentations, papers, and related discussion.

INTL-311—U.S. Intelligence Successes and Failures

Three Credit Hours

This course will examine a number of cases that aptly demonstrate the underlying operation, analytic and managerial “hows and whys” of U.S. intelligence success and failure. Reading material will include formal Congressional inquiries, declassified official “lessons learned”, unclassified articles by former practitioners, select media commentaries, and a few academic papers. The course will conclude with an examination of the various efforts at reform, some of which have fundamentally transformed the American Intelligence Community and others that have fallen short of effecting real change.

Case studies will highlight and explore the various “Ingredients for Intelligence Success” including: effective management structures and organization, well-honed collection programs and skills, well-honed analytic skills and analytic rigor, professional attentiveness and persistence, ingrained organizational cooperation, effective interagency communication and information sharing, sufficiently dedicated resources, and well-developed target understanding (via in-depth study.)

INTL-401—Intelligence Support to Military Operations

Three Credit Hours

Since the days of Sun Tzu, intelligence collection and analysis has provided “decision advantage” to military commanders at both the tactical and strategic levels. In today’s complex battle space, good intelligence often spells the difference between victory and defeat. In this course, students will learn the importance of intelligence for the warfighter, the myriad collection techniques available today, and evolving doctrine as it relates to the collection and analysis of intelligence (e.g., the use of drones).

INTL-402—The Military Instrument of Power

Three Credit Hours

A nation employs four instruments of power in order to achieve its strategic ends—Diplomacy (Political), Information, Military, and Economic. Often referred to as the DIME, these instruments provide a nation’s national leadership with a variety of unique

capabilities that, when properly synchronized with one another, can support a national strategy. The purpose of this course is to improve the student’s fluency of the military instrument of power. We will investigate the range of considerations for the employment of military power once the decision has been made to do so. Thus, the goal of this class is to appreciate the theory, capabilities, and limitations for the employment of the military instrument of power and the role played by strategic and operational intelligence in the planning for and employment of military force.

INTL-464—Intelligence Internship

Three Credit Hours

This course gives Intelligence and Security Studies students’ real-world work experience to complement the classroom education that they have previously received. Interns will learn about the variety of issues facing today’s intelligence community. Interns will receive three credits for every 120 hours they have successfully completed. This course may be repeated once for a total of six credits.

Prerequisite: Permission of Instructor

INTL-465—Special Topics in Intelligence

Three Credit Hours

An advanced seminar designed to examine in-depth topics in intelligence and security studies.

Mechanical Engineering (MECH)

MECH-101—Introduction to Mechanical Engineering

One Credit Hour

Required of all Mechanical Engineering freshmen.

The engineering design process is demonstrated through use of practical problem-solving methods for mechanical projects. Course subjects include mechanical engineering career paths, ethical canons of the engineering profession, and requirements for professional licensure. Course assignments, conducted within a collaborative learning environment, focus on creative engineering solutions through technical analysis, teamwork, communication skills, and professionalism. As a foundation for sustained success in mechanical engineering, additional course topics include: lifelong learning, time management, community and professional service, and career development.

Laboratory: Two hours

MECH-102—Engineering Computer Applications

Two Credit Hours

Required of all Mechanical Engineering freshmen. Foundations of computing to include software tools and engineering processes for mechanical engineers. Topics may include: structured programming (MATLAB), graphical drawings and 2D and 3D modeling of parts and assemblies. Introduction to teaming and creativity.

Laboratory: Four hours

MECH-304—Engineering Materials w/Lab

Three Credit Hours

Course explores the relationships between microscopic structure and macroscopic properties of materials used in engineering applications. The origin of mechanical, electrical, thermal and optical properties is studied. Important material failure modes

that occur under fatigue, elevated temperature, rapid loading and corrosive environments are explored. Emphasized is an understanding of the fundamental aspects of atomic and microstructural concepts for proper material selection, effects of processing on material properties, and enhancement of engineering properties. Materials under study include important metals and alloys as well as key nonmetallic materials such as polymers, ceramics, and composites. Laboratory exercises are integrated throughout the course to provide practical experience in making decisions concerning material composition and processing in order to optimize engineering properties. Experiences from the field are detailed to demonstrate applicability of concepts.

Prerequisites: CIVL 304/307 and CHEM 151 or CHEM 140

MECH-310—Thermal – Fluid Systems I w/Lab

Three Credit Hours

Thermal-Fluid System I is an integrated study of fundamental topics in thermodynamics and fluid mechanics. The course introduces conservation principles for mass, energy, and linear momentum as well as the 2nd Law of Thermodynamics. Principles are applied to incompressible flows in pipes and turbomachinery, external flows and power generation systems. A control volume approach to analyze these systems is also introduced. Laboratory exercises are integrated into classroom work. Lecture: 2 hours. Laboratory: 2 hours.

Prerequisites: MATH-132, PHYS-221, PHYS-271;

Prerequisites or Co-requisites: MATH-231, CIVL-203

MECH-311—Thermal – Fluid Systems II w/Lab

Three Credit Hours

Thermal-Fluid Systems II continues the integrated study of fundamental topics in thermodynamics and fluid mechanics. The course applies conservation principles for mass, energy, and linear momentum as well as the 2nd Law of Thermodynamics. Principles are applied to power generation systems (Rankine, Otto, Diesel, and Brayton cycles), refrigeration cycles, air conditioning processes, internal pipe flows, and aerodynamics. Laboratory exercises are integrated into classroom work. This course includes completion of a comprehensive, out-of-class design problem. This design problem provides the opportunity for students to apply engineering science to the design of a comprehensive thermal-fluid system.

Lecture: Two hours; Laboratory: Two hours.

Prerequisite: MECH-310 with a grade of “C” or higher

MECH-325—Computer Applications

Three Credit Hours

This course uses applied problems in engineering and mathematics to introduce Computer-Aided Drafting (CAD) and numerical problem-solving techniques. Covered topics include creation and editing of 3D parts and assemblies with appropriate design intent, configurations, equation-based modeling, finite element analysis, curve fitting and data analysis, numerical interpolation, integration, root finding, and linear algebraic system solutions.

Lecture: Two hours; Laboratory: Two hours

Prerequisites: MECH-102

MECH-330—Measurements and Instrumentation w/Lab

Three Credit Hours

Fundamentals of measurement systems in mechanical engineering

including transducer operation, signal conditioning, data reduction, and presentation of results. Transducer and measurement system characteristics including resolution, sensitivity, loading, time response, and frequency response. Operating principles of basic instrumentation for measurement of mechanical quantities such as force, torque, pressure, velocities, accelerations, temperature, and flow. Topics include uncertainty analysis, data analysis, probability and statistics, calibration, data acquisition, presentation of results, and an introduction to experiment design.

Lecture: Two hours; Laboratory: Two hours

Prerequisites: ELEC-201 or ELEC-208

MECH-340—Manufacturing Processes

Three Credit Hours

This is an introductory course that examines the interactions between design and manufacturing from the designer’s point of view. The first portion of the class is devoted to safe, hands-on experience with manufacturing machines and equipment. Students will have an opportunity to work on civil and mechanical manufacturing machines that are common in machine, woodworking, and sheet metal shops such as a mill, lathe, grinder, belt sander, drill press, and band saw. Common manufacturing processes will be introduced and design guidelines will be developed for each process. The successful student will leave this class with an appreciation that a designer must consider the method of manufacture during the design process to ensure that a product is functional, economically viable, and safe. Basic principles of metal processing; applied mechanics of metal cutting and forming; cost analysis of manufacturing operations.

Lecture: Two hours; Laboratory: Two hours

Prerequisites: CIVL-304/307

MECH-345—Machine Design

Three Credit Hours

This course introduces mechanical engineering design as an iterative decision making process and fundamental engineering science applied to machine components. Analysis for the design and manufacture of basic mechanical elements and their role in the design of machines; introduction to failure theory, fatigue analysis, and energy methods for deflection analysis and their application of them to the design and analysis of machine elements; design of multi-component systems. Useful design techniques (such as modeling, CPM, optimization, probabilistic approaches, etc.) and factors influencing design (such as human factors, products liability, ethics, societal, economics, safety, etc.) are presented, discussed, and incorporated. Design against static failure and fatigue failure of structural members and machine parts: design and selection of components including fasteners, welds (and welding techniques), shafts, springs, gears, bearings, and chain drives. The course culminates in a team-oriented process, design, and manufacture of a mechanical engineering product using the techniques, tools, machines, and equipment that were developed and taught throughout the course.

Lecture: Three hours

Prerequisites: CIVL-304/307

MECH-350—Modeling and Analysis of Dynamic Systems I

Three Credit Hours

This course covers dynamic modeling and control of linear systems through an overview of classical control theory as the foundation for control applications in electrical and mechanical systems. Topics

include system modeling using Laplace transform, Root Locus, frequency domain, and state variable methods. Mathematical models are developed for electrical, mechanical, and other physical control systems. Control systems analysis and design techniques are studied within the context of how each system is physically controlled in practice.

Lecture: Three hours

Prerequisites: CIVL-203, *Corequisite:* MECH-330, MATH-234

MECH-351—Modeling and Analysis of Dynamic Systems II w/ Lab

Three Credit Hours

This course continues the integrated study of controls engineering. Topics include stability, steady state error, transient response, vibrations, sinusoidal frequency analysis, system modeling and design via frequency response methods, state space methods, and introduction to digital control. Laboratory exercises are integrated into classroom work.

Lecture: Two hours; Laboratory: Two hours

Prerequisite: MECH 350

MECH-365—Computational Methods in Engineering

Three Credit Hours

An introduction to numerical methods for engineers. Applications include: fluid mechanics, gas dynamics, heat and mass transfer, thermodynamics, vibrations, automatic control systems, and kinematics. Topics include: sources for errors in computing, mathematical bases of numerical methods, and implementation of numerical techniques using MATLAB.

Lecture: Three hours.

Prerequisite: MECH 102. *Prerequisites or corequisite:* MATH 234.

MECH-404—Advanced Materials

Three Credit Hours

Fundamentals of deformation and fracture in metals, polymers, ceramics and composites with application to design. Emphasis on time-temperature dependence of polymers, brittle behavior of advanced ceramics, the fracture mechanics approach to high strength and critical application of design and composite behavior.

Lecture: Three hours

Prerequisite: MECH-304 with a grade of “C” or higher

MECH-408—Composite Design

Three Credit Hours

Introduces materials and mechanics of composites with emphasis on high performance polymer matrix composites. Topics include material selection, laminate analysis/design, design implications from manufacturing and joining methodology, and interpreting test results. A team design-built test project is required.

Lecture: Three hours

Prerequisite: MECH-304 with a grade of “C” or higher

MECH-409—Composite Manufacturing w/Lab

Three Credit Hours

This course covers manufacturing fundamentals, manufacturing processes, composite fabrication and assembly, quality and inspection methods, repair, and required equipment. Topics include material selection, laminate analysis, manufacturing, joining, and testing.

Lecture: Two hours; Laboratory: Two hours

Prerequisite: MECH-304 with a grade of “C” or higher

MECH-415—Heat Transfer

Three Credit Hours

The three modes of heat transfer (conduction, convection, and radiation) are studied in detail, and applications are made to various engineering components including plane walls, finned surfaces, and tube arrays. The principles of conduction and convection are used to study the design and operation of heat exchangers. Numerical methods are employed to study 2D conduction.

Lecture: Three hours.

Prerequisite: MATH 234, MECH 311.

MECH-416—Mass and Energy Balances

Three Credit Hours

Introduction to mass and energy balances in single phase and multiphase, nonreactive and reactive systems. Course topics include an introduction to engineering calculations and process variables, use of computers in solving chemical engineering problems, fundamentals of material balances in single-phase and multi-phase systems, energy balances on nonreactive and reactive processes, applications of combined material and energy balances, balances on transient processes, introduction to chemical engineering unit operations, and a general introduction to the field of chemical engineering.

Lecture: Three hours

Prerequisite: CHEM-140 or 151

MECH-417—Renewable Energy

Three Credit Hours

Covers renewable energy sources such as solar heating and cooling, wind energy, biomass, and photovoltaic energy. Surveys the energy availability of these sources and life cycle cost and present value used to evaluate the system. Students will design a system which utilizes a renewable energy source and economically evaluate the system.

Lecture: Three hours

Prerequisites: MECH-310

MECH-418—Energy Conversion Systems w/Lab

Three Credit Hours

An overview and historical evolution of both classical and state-of-the-art energy conversion technology. Advanced analysis of energy conversion hardware, air conditioning and refrigeration as well as fossil fuel combustion processes using concepts of energy. Major methods of direct energy conversion are covered, including thermoelectricity, photovoltaics, thermionics, magneto hydrodynamics, and fuel cells. Applications of the thermodynamic, heat transfer, and fluid flow principles to the modeling and design of thermal systems. These systems include pumps, fans, and heat and mass exchangers. The current state of national and world energy is presented and alternatives including renewable energy and a hydrogen economy are explored with reference to economic, political, environmental and technological factors.

Lecture: Two hours; Laboratory: Two hours

Prerequisite: MECH-415 with a grade of “C” or higher

MECH-419—Mechanical Power Plants

Three Credit Hours

Students engage in the analysis, testing and evaluation of internal combustion engines and their subsystems with a view toward understanding the underlying principles which affect their design. Spark ignition and compression ignition engine systems are studied

in detail. Steam, cogeneration and combined cycles are studied. Introduces the theory and issues related to the design of axial and radial flow turbines, compressors and pumps.

Lecture: Three hours

Prerequisite: MECH-311

MECH-420—Nuclear Reactor Analysis

Three Credit Hours

This course focuses on nuclear reactor systems, the release of nuclear energy in the reactor core, and its removal as heat for producing electric power. Specific topics emphasize reactor kinetics, heterogeneous reactors, control rods and shim, reactor poisons, heat transfer, and alternative energy systems. The fundamentals of transport theory and the solution to the transport equation using Monte Carlo N-Particle (MCNPX) transport code are introduced.

Lecture: Three hours

Prerequisites: MECH-415

MECH-425—Advanced Heat Transfer

Three Credit Hours

This course covers additional topics in conduction, convection and radiation heat transfer as well as mass transfer, phase change and numerical methods.

Lecture: Three hours

Prerequisite: MECH-415 with a grade of “C” or higher

MECH-426—Air Conditioning

Three Credit Hours

Human comfort and the properties of air. Air conditioning in residences, public and industrial buildings using vapor compression and absorption units. Cooling loads, psychrometry, fans, duct sizing and layout, automatic control, and acoustic design considerations.

Lecture: Three hours

Prerequisite: MECH 311

MECH-430—Robotics Engineering w/Lab

Three Credit Hours

Interdisciplinary course in engineering systems applied to computer controlled devices. Topics include kinematics, control, operation, sensing, and design as applied to various types of industrial and other robots and programmable manipulators. A related project is required.

Lecture: Two hours, Laboratory: Two hours

Prerequisite: MECH-350

MECH-435—Finite Elements for Engineering Applications

Three Credit Hours

Emphasizes solving various one-dimensional, transient, non-linear problem statements including heat conduction, beam deflection, convection/diffusion (transport), gas dynamic shocks, and open channel flows. Assesses higher order bases, time stepping procedures, iterative solvers, and finite difference methodologies. Utilizes MATLAB for computational experiments

Lecture: Three hours

Prerequisites: CIVL-203, 304, MECH-310

MECH-440—Advanced Manufacturing Processes & Their Application

Three Credit Hours

This course examines major manufacturing processes, their

capabilities, analysis, economics and manufacturing process selection. Computer programming is used for iterative methods in both analysis and design. Students will perform analysis in the fields of kinematics, mechanics, fluid mechanics, and heat transfer. The economics of process selection, batch size, and process flow are discussed. Process control methods are introduced.

Lecture: Three hours

Prerequisites: CIVL-203 & MECH-340 with a grade of “C” or higher

MECH-445—Manufacturing Design w/Lab

Three Credit Hours

Applications of fundamentals of engineering mechanics in analysis and synthesis of machine components and systems to the manufacture of products from metals, polymers, ceramics, and composites. Use and management of computers in engineering for drafting, design management, documentation, and manufacturing. Covers drafting methods and standards, design data management, CNC operations, implementation, kinematics, control, operation, sensing, and design as applied to various types of industrial models. A related project is required.

Lecture: Two hours; Laboratory: Two hours

Prerequisite: MECH-345 and MECH-440

MECH-450—Mechatronics w/Lab

Three Credit Hours

Applications of microprocessors and microcontrollers and digital electronics to the design and utilization of embedded control systems in smart systems and products. Topics include Boolean logic and algebra, system hardware and software development, and interfacing for mechanical applications.

Lecture: Two hours; Laboratory: Two hours

Prerequisite: MECH-350

MECH-452—Digital Logic and Circuits w/Lab

Three Credit Hours

This course covers the analysis, design, simulation, and construction of digital logic circuits and systems. The material in this course provides the necessary tools to design digital hardware circuits such as digital clocks and locks, as well as computer hardware. The course begins with the study of binary and hexadecimal number systems, Boolean algebra, and their application to the design of combinational logic circuits. The first half of the course focuses on designs using small-scale integration (SSI) logic circuits, medium-scale integration (MSI) circuits, and programmable logic devices (PLDs) to implement combinational logic functions. The second half of the course emphasizes sequential logic circuits like counters and sequence recognizers, and also covers memory systems. Laboratory work in this half of the course focuses on using very high speed integrated circuit hardware description language (VHDL) to simulate digital systems and to program those systems into PLDs. As a final project, student teams design, build, and test a digital logic system such as a programmable alarm clock, digital lock, or burglar alarm.

Lecture: Two hours; Laboratory: Two hours.

Prerequisite: ELEC-201 or ELEC-208

MECH-455—Advanced Mechatronics w/Lab

Three Credit Hours

A comprehensive course in the field of mechatronics. Mechatronics is the crossroads in engineering where mechanical engineering, electrical engineering, computer science, and controls engineering

meet to create new and exciting real-world systems. Knowledge of mechanical and electrical components, controls theory, and design are integrated to solve actual physical design applications.

Lecture: Two hours; Laboratory: Two hours

Prerequisite: MECH-450 with a grade of “C” or higher

MECH-460—Mechanical Engineering System Design

Three Credit Hours

This course provides experience in the integration of math, science, and engineering principles leading to a comprehensive engineering design project. Open-ended, client-based design problems emphasize a multidisciplinary approach to total system design providing multiple paths to a number of feasible and acceptable solutions which meet the stated performance requirements. Design teams are required to develop product specifications, generate alternatives through modeling, make practical engineering approximations to include probabilistic approaches, perform appropriate analysis to support the technical feasibility of the design, and make decisions leading to an optimal system design. System integration, reverse engineering/redesign projects, human factors engineering, products liability, ethics, safety, computer-aided design, maintainability, and fabrication techniques are addressed. This course provides an integrative experience in support of the overarching academic program goal.

Lecture: Three hours

Corequisite: MECH-345

MECH-470—Introduction to Applied Aerodynamics

Three Credit Hours

The fundamental laws of fluid mechanics are used to develop the characteristic forces and moments generated by the flow about aerodynamic bodies. Physical properties of the standard atmosphere as well as lift, drag, and aerodynamic moments are studied for airfoils (2-D) and finite wings (3-D) in the subsonic and supersonic flow regimes. Students conduct computer simulations throughout the course to observe physics of actual flows.

Lecture: Three hours

Prerequisite: MECH 311 with a grade of “C” or higher

MECH-475—Aircraft Performance and Static Stability

Three Credit Hours

The course applies the principles developed in applied aerodynamics to develop the equations of motion for a rigid aircraft in steady state level flight, maneuvering flight, and during takeoff and landing. These equations are analyzed to determine such performance characteristics as maximum range, endurance, turning rate, climb rate, etc. Piston-prop, turbo-prop, and jet aircraft are considered. The equations of motion are then analyzed to develop static stability criteria and investigate steady state control characteristics. Design constraints based on customer requirements, mission profiles, aircraft sizing, optimization, and presentation of performance capabilities are considered.

Lecture: Three hours

Prerequisite: MECH 470

MECH-476—Propulsion Systems

Three Credit Hours

Application of basic principles in the study of the performance characteristics of air and space vehicles to include the aerodynamics of steady one dimensional isentropic compressible flow. Shock waves, gas turbines, turbojet, turbofan, turboprop, turboshaft, ram

jet, rocket, nuclear propulsion and space propulsion systems are discussed and compared.

Lecture: Three hours

Prerequisite: MECH 311

MECH-477—Vibration Engineering

Three Credit Hours

In this course students develop a foundation in the analysis and design of free and forced single and multi-degree of freedom systems. Applications include modeling, damping, resonance, force transmissibility, vibration absorbers, matrix formulation and modal analysis. Emphasis is placed on vibration examples from several engineering fields. Out-of-class design problems provide students with the opportunity to apply principles taught in the classroom to realistic problems encountered by practicing engineers. In-class demonstrations supplement the theory development.

Lecture: Three hours

Prerequisite: CIVL 203

MECH-478—Lightweight Structures

Three Credit Hours

Applies the principles of mechanics to the structural analysis of mechanical and aerospace components. Covers stress tensors, shear flow in open and closed sections, beam columns, asymmetrical bending, Castigliano’s theorem, statically indeterminate structures, thin walled pressure vessels, introduction to elasticity.

Lecture: Three hours

Prerequisite: CIVL-304/307

MECH-481—Senior Design I

Three Credit Hours

Design projects with industry. Students work in teams with three or four members on design projects furnished from external clients. The emphasis is on creating design solutions, with appropriate analyses, to meet stakeholders’ needs. In addition to regular meetings with their faculty advisors, the teams are expected to maintain close and continuous communications with their clients during the semester. The projects culminate in oral presentations and Interim Written Reports which are submitted to the clients.

Lecture: Two hours; Laboratory: Two hours

Prerequisite: MECH-345, MECH-460

MECH-482—Senior Design II

Three Credit Hours

The student teams continue their design solutions to a general problem furnished by an external client. Continuous and regular communication with the outside clients is expected, as well as with the faculty advisors. During this semester the teams continue refining their solutions, complete the detail design, make oral presentations of the final design, and complete and submit the Final Written Report.

Lecture: One hour, Laboratory: Four hours

Prerequisite: MECH-481 (This course is a continuation of MECH-481)

MECH-497—Special Topics in Mechanical Engineering

Three Credit Hours

This course provides in-depth study of a special topic in engineering mechanics or mechanical engineering not offered elsewhere in the curriculum. Course content will be based on the special expertise of the Visiting Professor or a senior mechanical engineering faculty

member.

Lecture: Three hours

Prerequisite: Department Head approval.

MECH-498 – Mechanical Engineering Internship

Three Credit Hours

The student, on an individual basis, pursues advanced understanding by working for a mechanical engineering company. The scope of the activities is tailored to the educational focus of the student in consultation with the faculty advisor and the supervisor at the company. The student is required to provide weekly journaling, monthly supervisor evaluations, a final presentation, and a final report on the experience. LESSONS and LABS: No formal class. Consultation with Department Faculty Advisor at least once a week on individual work accomplished.

Prerequisite: Department Head approval.

MECH-499—Advanced Independent Study in Mechanical

Three Credit Hours

The student, on an individual or small group basis, pursues advanced study of a research topic in mechanical engineering. The scope of the course is tailored to the desires of the student in consultation with the faculty advisor. The student is required to define and analyze the problem, study the fundamentals involved, organize the approach, determine the procedure, achieve a solution, and submit a written report. LESSONS and LABS: No formal class. Consultation with Department Faculty Advisor at least once a week on individual work required.

Prerequisite: Department Head approval. Other requirements as determined by Faculty Advisor.

Political Science (PSCI)

PSCI-302—Urban Politics

Three Credit Hours

A study of mass participation in urban political affairs, political parties on local level, the municipal reform movement, and the alternative approaches to the study of local political systems. Emphasis placed on the problems of local government in metropolitan areas.

PSCI-310—Domestic Terrorism

Three Credit Hours

A survey of the domestic terrorism landscape in the United States by examining groups involving local nationals that use or attempt to use extreme violence against purely domestic targets. The course explores how nationalistic, religion-political, ideological, and single-issue terrorist groups attempt to influence or coerce others into action they would not otherwise take. The course also explores law-enforcement measures aimed at countering the threat of domestic terrorism.

PSCI-311—The Civil Rights Movement and American Politics

Three Credit Hours

Examination of the Civil Rights Movement from World War II to the present with special attention to the period from 1954 through 1965. The course will consider the impact of this critical period on American politics and political behavior during the decades since, down to the present. Key events, organizations, and personalities will be examined, and continuing issues such as affirmative action and

racial typing will be discussed.

PSCI-342—International Terrorism

Three Credit Hours

A study of international and transnational political violence, with some attention to the phenomenon of “state terrorism” (international repression) and its potential impact on the conduct of American foreign policy. Issues addressed include conceptualizing and defining terrorism, the structure of violent politics, the lessons and patterns from the history of contemporary political violence, state support for terrorism, and counterterrorism as a public policy problem.

PSCI-361—Law and Legal Process

Three Credit Hours

This course serves as a general introduction to law, lawyers, judges, and the civil legal process. Through lectures, assigned reading, and class seminars, the course will broadly survey the American legal process, including the nature of law, judicial organization and the instruments of judicial power, civil proceedings and civil law, the work and training of lawyers, the recruitment of judges, and the nature of judicial decision-making. (Note: The criminal justice system is surveyed in CRMJ 201, Introduction to Criminal Justice.)

PSCI-392—Political Theory

Three Credit Hours

Major theoretical writing from the ancient Greeks to the present day; emphasis on a comparison of ideas and on the relationships between theories and contemporary problems.

PSCI-401—Political Issues and Public Policy

Three Credit Hours

An introduction to political analysis through consideration of important contemporary American political issues as they relate to public policy; attention given to specific issues as well as the policy process (formulation, implementation, and evaluation of policy).

PSCI-461—Issues in Contemporary Constitutional Law

Three Credit Hours.

A study of selected cases and issues in U.S. constitutional law relating to contemporary controversies in American law and politics. The specific issues and cases studied may vary from semester to semester.

PSCI-462—Constitutional Law: Civil Right and Liberties

Three Credit Hours

Required of political science seniors. A study of the underlying and basic principles of the Constitution as reflected in the leading decisions of the United States Supreme Court with special attention directed to the Bill of Rights and the Thirteenth, Fourteenth, and Fifteenth Amendments.

PSCI-492—Special Topics in Political Science: Modern Ideologies

Three Credit Hours

The course’s primary objective is to gain familiarity with and understanding of the nature and role of political ideologies and to understand the potential of these political ideas for 21st century politics. In addition to the major political ideologies of the 19th and 20th centuries ~ liberalism, conservatism, fascism, socialism, and communism – the course will examine the contemporary appeal of environmentalism and feminism to ascertain whether they are, in

fact, operating as ideologies in today's politics. The course will also look at Political Islam as a powerful political force today.

Sociology (SOCI)

SOCI-201—Introduction to Sociology

Three Credit Hours

The scientific study of principles and comparisons in society and cults, and a historical analysis of the phenomenon will be undertaken. A sociological examination of their impact on social norms and ideologies will be discussed; government reactions to cults and cult activities will also be addressed.

SOCI-202—Social Problems

Three Credit Hours

The study of the social construction of social problems as well as their impact on society. Also included the analysis of deviant behavior and those factors affecting the disorganization of small groups, complex organizations, and societies.

SOCI-301—Cults

Three Credit Hours

An examination and analysis of alternative religious ideologies and groups. Attention will be given to defining and explaining cults, and a historical analysis of the phenomenon will be undertaken. A sociological examination of their impact on social norms and ideologies will be discussed; government reactions to cults and cult activities will also be addressed.

SOCI-304—Minority Group Relations

Three Credit Hours

An examination of the substantive issues in the study of majority-minority group relations and social processes, and the cultural orientations which are associated with these issues.

SOCI-433—Special Topics in Sociology

Three Credit Hours

Selected special topics or problems in the general area of sociology and social problems; offered periodically as the special interests of faculty and students permit.

SOCI-498—Independent Study

Three Credit Hours

An independent study project resulting in a formal paper; this study must be approved by the department head in consultation with an appropriate member of the Sociology faculty who will supervise the project. Especially recommended for those considering graduate or professional study.

Tactical Strength and Conditioning (TSAC)

TSAC-201—Anatomy and Physiology for Health and Human Performance

Three Credit Hours

This course provides foundational understanding of concepts in human anatomy and physiology as they relate the human body's

adaptations to exercise. Specific content areas covered in this class include introductions to muscular and skeletal anatomy and physiology, functional anatomy, biomechanics, bioenergetics, and medical terminology.

TSAC-301—Tactical Strength and Conditioning

Three Credit Hours

A study of fundamental concepts in bioenergetics, biomechanics, and cardiopulmonary and skeletal muscle function and adaptation, as it relates to the physical conditioning, training, and physical fitness of tactical personnel. Current research, and laboratory techniques for assessing human physiological responses to exercise and training, will be studied and applied to tactical athletes. Topics to be covered include but are not limited to: testing and evaluating tactical populations, nutrition for tactical populations, and physiological issues related to fire and rescue, law enforcement, and military personnel.

TSAC-302—Care and Prevention of Injuries for Tactical Athletes

Three Credit Hours

This class will provide discussion, demonstration, and application of skills and procedures used in athletic training for preventing training-related injuries commonly associated with tactical athletes. Specifically, focus will be placed on caring for and preventing training-related injuries seen in basic combat training.

TSAC-395—Directed Field Experience in Tactical Strength and Conditioning

Three Credit Hours

A 100 hour controlled exposure to professional experiences in the field of tactical strength and conditioning. The primary purpose of this course is to provide a field-based learning experience where the student shadows and assists a professional working with tactical athletes in either a military installation, or private or public civilian environment.

TSAC-495—Internship in Tactical Strength and Conditioning

Three Credit Hours

A requirement for graduation is observation of and involvement in the physical conditioning of tactical athletes under an approved supervisor and supervision by the college instructor. This supervised internship experience must be at least 300 hours and must take place in a private or public sector host organization focused on strength and conditioning of tactical athletes. Students will actively participate in designing and delivering strength and conditioning programs aimed at improving physical readiness of a single tactical athlete and/or groups of tactical athletes. This internship will provide the student with hands-on skills and knowledge for handling the nuances of training tactical athletes. Upon completion of the internship, students will present a comprehensive summary of their internship experience, and will be formally evaluated by the internship supervisor and the college instructor.