



# CHRISTOPHER NEWPORT

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## UNIVERSITY

# Graduate Catalog

## 2023-2024

The provisions of this catalog do not constitute a contract, expressed or implied, between any applicant or student and the Rector and Board of Visitors of Christopher Newport University. The University reserves the right to change any of the provisions, schedules, programs, courses, rules, regulations, or fees whenever the University deems it expedient to do so.

Christopher Newport University is committed to providing an environment that emphasizes the dignity and worth of every member of its community and that is free from harassment and discrimination in admissions, employment, and education programs or activities based on race, color, religion, sex, national origin, age, disability, genetic information, sexual orientation, gender identity, marital status, military/veteran status, political affiliation, pregnancy, or any other status protected by law. Such an environment is necessary to a healthy learning, working, and living atmosphere because discrimination and harassment undermine human dignity and the positive connection among everyone on campus. In pursuit of this goal, any question of impermissible discrimination and/or harassment on these bases will be addressed with efficiency and energy in accordance with the Discrimination, Harassment and Sexual Misconduct Policy. Anyone having questions concerning the policy and procedures should contact the Director of Title IX and Equal Opportunity/Title IX Coordinator, Christopher Newport University, 1 Avenue of the Arts, 100 Christopher Newport Hall, Newport News, VA, 20606, (757) 594-8819, [titleixeo@cnu.edu](mailto:titleixeo@cnu.edu).

Under Title IX of the Education Amendments of 1972, discrimination and harassment on the basis of sex in any education program or activity including admission and employment is prohibited. Inquiries about this may be directed to the Director of Title IX and Equal Opportunity or to the U. S. Department of Education, Office of Civil Rights, 400 Maryland Avenue SW, Washington, DC, 20202, (800) 421-3481, [OCR@ed.gov](mailto:OCR@ed.gov).

Graduate Studies  
Trible Library 243  
(757) 594 - 8585  
1 Avenue of the Arts  
Newport News, VA 23606-3072  
[cnu.edu/academics/graduatestudies/](http://cnu.edu/academics/graduatestudies/)

Dear Prospective and Accepted Graduate Students:

Welcome to the graduate programs at Christopher Newport University. CNU prides itself in providing excellent instruction and intellectually challenging research opportunities to not only undergraduate students, but also students in our graduate programs. We serve the commonwealth with four Master's degree programs: Master of Arts in Teaching (MAT), Master of Financial Analysis (MFinA), Master of Science in Environmental Science (MS-ENVS), and Master of Science in Applied Physics and Computer Science (MS-APCS).

The two MS programs emphasize strong intellectual exploration to enhance contributions to your profession and/or continued study towards a Ph.D. degree. The MS in Applied Physics and Computer Science has an excellent record of research and publication in nuclear and particle physics, gravitational wave detection and astrophysics, robotics and artificial intelligence, and microprocessors and data acquisition with strong connections to two national laboratories: the NASA Langley Research Center and the Thomas Jefferson National Accelerator Facility. The MS in Environmental Science provides an opportunity for students to work in the rapidly growing field of environmental monitoring and conservation. Students will work with top research scientists in such fields as wetland conservation, applied conservation biology, estuarine ecology, environmental microbiology, and atmospheric chemistry. In addition, the University offers five-year programs in which CNU students can complete both their undergraduate degree and the master's degree in five years.

The nationally accredited (CAEP) MAT program prepares students to become highly qualified, licensed teachers. Students take courses that will build on content knowledge and develop pedagogical tools for effective instructional practice. Faculty in our teaching program come from across the University and the Newport News Public School System. The MAT faculty bring both excitement for teaching and practiced pedagogical instruction to the classroom. In addition to the traditional Master of Arts in Teaching degree, the program also offers an initial licensure only program and a five-year program for CNU students interested in earning a Bachelor's and Master's degree with Licensure.

Finally, Christopher Newport University offers the Master of Financial Analysis degree program. This new program is designed to address the ever-changing fields of finance and accounting. Full-time students are able to complete the 30-credit hour degree in less than a year, including a project-based capstone experience. Graduates will be prepared to advise both companies and individuals on important financial decisions, including future earning potential, investment, tax and estate planning, and profitability.

The pages that follow explain each program in detail. We encourage you to visit each program's website for additional information. If you have any questions, do not hesitate to contact Graduate Studies via telephone (757) 594-8585 or email ([gradstudy@cnu.edu](mailto:gradstudy@cnu.edu)).

Thank you for your interest in our graduate programs. We look forward to working with you as you progress towards the completion of your advanced degree.

Sincerely,

*Lynn Lambert*

**Lynn Lambert, Ph.D.**  
**Associate Provost for Research and Dean of Graduate Studies**

### **STUDENT RESPONSIBILITY FOR GRADUATE CATALOG INFORMATION**

Graduate students are held individually responsible for the information contained in the Christopher Newport University Graduate Catalog. Failure to read and comply with University regulations will not exempt students from whatever penalties they may incur. Students beginning their programs of graduate study at Christopher Newport University should retain this catalog as a reference.

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## THE UNIVERSITY HONOR SYSTEM

The reputation and credibility of an institution of higher education requires the commitment of every member of the community to uphold and to protect its academic and social integrity. As such, all members of the Christopher Newport University community uphold and enforce the following:

The Honor Code:

***“On my honor, I will maintain the highest standards of honesty, integrity, and personal responsibility. This means I will not lie, cheat, or steal, and as a member of this academic community, I am committed to creating an environment of respect and mutual trust.”***

Under the Honor Code of Christopher Newport University, it is expected that all members of the University community will demonstrate honesty and integrity in their conduct. Intentional acts of lying, cheating or stealing are violations of the Code that can result in sanctioning.

Each member of the University community is responsible for upholding and enforcing the Honor Code. The Honor System cannot function unless each member of the University community takes action when they believe any person may have violated the Honor Code. Members of this University community are obligated to report violations to appropriate University personnel in order to ensure the efficacy of the system.

## STUDENT ACADEMIC RESPONSIBILITIES

CNU is a community comprised of students who:

- Value higher education and the community of scholars;
- Understand the meaning and aims of liberal learning;
- Establish learning as their top priority;
- Take initiative to participate actively in their own learning;
- Prepare for class, and attend regularly and on time;
- Take learning seriously in thought, word, and conduct;
- Complete assignments on time and with care;
- Respect all members of the academic community;
- Follow proper procedures and lines of authority for pursuing concerns and complaints;
- Know, understand and follow the *University Honor Code*, and the general requirements for graduation; and
- Take responsibility to seek help from faculty, staff, and fellow students as needed to succeed academically.

CHRISTOPHER NEWPORT UNIVERSITY  
ACADEMIC CALENDAR  
2023-2024

IF APPLICABLE, DETAILED CHANGES TO THE 2023-2024 ACADEMIC CALENDAR  
CAN BE FOUND AT [HTTPS://CNU.EDU/PUBLIC/CALENDAR/](https://cnu.edu/public/calendar/).

**Fall Semester 2023: August 21, 2023 - December 9, 2023++**

August	16-25	W-F	Final Add/Drop Period
	18	F	Academic Convocation and Honor Code Induction Ceremony
	21	M	Classes Begin
	25	F	Last day to Change to Audit Status -- 5:00 pm
	25	F	Last day to Add/Drop -- 11:59pm
September	4	M	Labor Day -- CLASSES WILL MEET
	8	F	Deadline for Faculty to Submit Change of 'I' Grade or Extension of 'I' Grade for Undergraduate and Graduate Students for Spring/Summer 2023 'I' Grades (5:00 pm)
	11	M	Three Week Grade Entry Begins -- 8:00 am
	15	F	Three Week Grades Due -- 12:00 Noon
October	2	M	Mid-Term Grade Entry Begins*
	6	F	Mid-Term Grades Due** -- 12:00 Noon
	6	F	Fall Recess (begins at 5:00 pm)
	11	W	Classes Resume
	18	W	Last Day to Withdraw and Elect Pass/Fail Option -- 5:00 pm
November	21	T	Thanksgiving Recess (begins after last class meets)
	27	M	Classes Resume
December	1	F	Classes End++
	2	S	University Reading/Study Day
	3	Su	University Reading/Study Day
	4	M	Final Examinations Begin+
	4	M	Final Grade Entry Begins*** -- 8:00 am
	5	T	Final Examinations Continue+
	6	W	University Reading/Study Day
	7	Th	Final Examinations Continue+
	8	F	Final Examinations Continue+
	9	S	Final Examinations End++
	13	W	Final Grades Due**** -- 10:00 am

**Spring Semester 2024: January 8 -- April 30, 2024++**

January	3-12	W-F	Final Add/Drop Period
	8	M	Classes Begin
	12	F	Last day to change to Audit status - 5:00pm
	12	F	Last day to Add/Drop -- 11:59pm
	15	M	Martin Luther King Day -- CLASSES DO NOT MEET
	26	F	Deadline for Faculty to Submit Change of 'I' Grade or Extension of 'I' Grade for Undergraduate and Graduate Students for Fall 2023 'I' Grades (5:00 pm)
	29	M	Three Week Grade Entry Begins -- 8:00 am
February	2	F	Three Week Grades Due -- 12:00 Noon
	26	M	Mid-Term Grade Entry Begins* -- 8:00 am
March	1	F	Mid-Term Grades Due** -- 12:00 Noon
	1	F	Spring Recess (begins at 5:00 pm)
	11	M	Classes Resume
	15	F	Last Day to Withdraw and Elect Pass/Fail Option -- 5:00 pm
April	22	M	Classes End++
	23	T	University Reading/Study Day
	24	W	Final Examinations Begin+
	24	W	Final Grade Entry Begins*** -- 8:00 am
	25	Th	Final Examinations Continue+
	26	F	Final Examinations Continue+
	27	S	University Reading/Study Days
	28	Su	University Reading/Study Days

	29	M	Final Examinations Continue+
	30	T	Final Examinations End++
May	3	F	Final Grades Due**** – 10:00 am
	6-10	M-F	Commencement Week Activities
	11	S	Spring Commencement

**May 2024 Term: May 6- May 24,2024++ (Three-week session: Mon-Fri Classes) Undergraduate Courses Only**

May	6	M	Classes Begin
	7	T	Last day to change to Audit status - 5:00pm
	7	T	Last day to Add/Drop – 11:59pm
	15	W	Last Day to Withdraw and Elect Pass/Fail Option -- 5:00 pm
	23	Th	Classes End++
	24	F	Final Grade Entry Begins *** -- 8:00 am
	24	F	Final Examinations
	31	F	Final Grades Due **** -- 12:00 Noon

Note: Graduate level courses may not be offered in May Term.

**Extended Summer Term 2024: May 6 - August 9, 2024++**

May	6	M	Classes May Begin
August	2	F	Final Grade Entry Begins *** -- 8:00 am
August	9	F	Classes May End++
	9	F	FINAL GRADES DUE **** -- 12:00 NOON

**Summer Term I 2024: June 3 – June 28, 2024++ (4 Week Term: Mon-Fri Classes)**

June	3	M	Classes Begin
	4	T	Last day to change to Audit status - 5:00pm
	4	T	Last day to Add/Drop – 11:59pm
	19	W	Juneteenth - CLASSES DO NOT MEET
	20	Th	Last Day to Withdraw and Elect Pass/Fail Option -- 5:00 pm
	27	Th	Classes End++
	28	F	Final Grade Entry Begins *** -- 8:00 am
	28	F	Final Examinations+
July	3	W	Final Grades Due **** -- 12:00 Noon

**Summer Term II 2024: July 8 – August 9, 2024++ (5 Week Term: Mon- Thurs Classes)**

July	8	M	Classes Begin
	9	T	Last day to change to Audit status - 5:00pm
	9	T	Last day to Add/Drop – 11:59pm
	17	W	Last Day to Withdraw and Elect Pass/Fail Option -- 5:00 pm
August	8	Th	Classes End++
	9	F	Final Grade Entry Begins *** -- 8:00 am
	9	F	Final Examinations+
	13	T	Final Grades Due **** -- 12:00 Noon

\* Instructors may begin entering midterm grades via CNU Live.

\*\* Deadline for instructors to enter midterm grades.

\*\*\* Instructors may begin entering final grades via CNU Live.

\*\*\*\* Deadline for instructors to enter final grades.

+ Final examination room conflicts will be resolved by the Office of the Registrar and University Scheduling.

++ Please note that the semester may be extended due to unforeseen postponements.

## CHRISTOPHER NEWPORT UNIVERSITY

1 Avenue of the Arts  
Newport News, VA 23606-3072  
(757) 594-7000  
cnu.edu

Christopher Newport University is the youngest comprehensive university in the Commonwealth of Virginia. However, it came into being as part of the oldest academic institution in the Commonwealth. For this reason, it has a great sense of history and a strong vision of the future. Christopher Newport College was established by the Virginia General Assembly in 1960 as a two-year branch of The College of William and Mary. It became a four-year baccalaureate degree-granting institution in 1971 and became totally independent of The College of William and Mary in 1977.

The University began offering graduate programs in July 1991; and in July 1992 was renamed Christopher Newport University. The University derives its name from Captain Christopher Newport, who was put “in sole charge and command” of the squadron of three ships that landed at Jamestown in 1607. He was among the most important men connected with the permanent settling of Virginia.

### **Mission**

The mission of Christopher Newport University is to provide educational and cultural opportunities that benefit CNU students, the residents of the Commonwealth of Virginia and the nation. CNU provides outstanding academic programs, encourages service and leadership within the community, and provides opportunities for student involvement in nationally and regionally recognized research and arts programs.

Our primary focus is excellence in teaching, inspired by sound scholarship. At CNU, personal attention in small classes creates a student-centered environment where creativity and excellence can flourish. Our primary emphasis is to provide outstanding undergraduate education. We also serve the Commonwealth with master’s degree programs that provide intellectual and professional development for graduate-level students.

We are committed to providing a liberal arts education that stimulates intellectual inquiry and fosters social and civic values. CNU students acquire the qualities of mind and spirit that prepare them to lead lives with meaning and purpose. As a state university, we are committed to service that shapes the economic, civic, and cultural life of our community and Commonwealth.

### **Mission of Graduate Studies**

The graduate programs at Christopher Newport University offer degrees at the master’s level for the educational and professional enhancement and enrichment of students and in response to the needs of the CNU community. Graduate study at CNU requires students to extend their knowledge and intellectual maturity to a level of complexity and sophistication well beyond that of undergraduate education. Graduate students are required not only to gain an understanding of the subject matter and the nature of research in their discipline but also to engage in their own research projects (MS), integrated capstone (MFinA) or internship (MAT). The goal of this activity is to give the master’s degree recipient greater ability to practice in and contribute to a profession or field of scholarship.

Graduate faculty members are active scholars and practitioners in their fields who are recognized as productively engaged in their professions. As such, these faculty members serve as models for graduate students and provide for them an appropriate level of knowledge and research expertise. CNU’s graduate programs are committed to teaching and scholarship of high quality and to the availability of faculty members to students.

### **Organization of the University**

The faculty and academic departments of the University are organized into the College of Arts and Humanities, the College of Natural and Behavioral Sciences, the College of Social Sciences and the Joseph W. Luter, III School of Business. The chief academic officer of the University is the Provost. The chief administrative officer of each college is the Dean, who reports directly to the Provost. Each academic department within a given college is responsible for the content and prerequisite structure of courses offered by the department and specifies the requirements for the department’s degree and certification programs. The Chair is the chief administrative officer at the departmental level. The graduate program is administered by the Associate Provost for Research and Dean of Graduate Studies. Instruction and research are carried out by the graduate faculty.

The University derives its financial support from the Virginia General Assembly and from tuition and fees paid by students. The Christopher Newport University Board of Visitors, appointed by the Governor of Virginia, directs the affairs of the University. The President of the University, appointed by the Board of Visitors, is the delegated authority over the administration and the courses of instruction.

### Organization of the Academic Year

The University year is divided into two semesters, August to December (fall semester) and January to May (spring semester), May term and two summer terms. Master of Science students may be admitted to the University for full or part-time study beginning the fall or spring semesters, or prior to the summer terms.

The Master of Financial Analysis program admits students for Fall only. The Teacher Preparation Program admits students for spring semester and summer terms only.

### Accreditation

Christopher Newport University is accredited by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) to award degrees at the baccalaureate and master's degree levels. Degree-granting institutions also may offer credentials such as certificates and diplomas at approved degree levels. Questions about the accreditation of Christopher Newport University may be directed in writing to the Southern Association of Colleges and Schools Commission on Colleges at 1866 Southern Lane, Decatur, GA 30033-4097, by calling (404) 679-4500, or by using information available on SACSCOC's website, [www.sacscoc.org](http://www.sacscoc.org).

### Location

The University is located in suburban Newport News, midway between Williamsburg and Norfolk. Air service is available at the nearby Newport News/Williamsburg International Airport and at the Norfolk International Airport.

### The Campus: Present and Future

CNU's campus encompasses 260 acres within a park-like setting in Newport News. We take pride in building everything to the highest standards. CNU also ranks as one of the safest campuses in Virginia.

We have completed nearly \$1 billion in new capital construction over the past 16 years, including the David Student Union. The Paul and Rosemary Tribble Library, with its 14-story tower lighted day and night, is the intellectual center of campus. It features a gourmet coffee shop with study rooms for quiet collaboration with friends, spacious reading rooms, and quiet corners for reflection and study.

The Mary M. Torggler Fine Arts Center is a stunning new addition to campus. Graced by an entry rotunda of cascading glass domes, the Torggler features technologically advanced exhibition space, community art facilities and classrooms, offices and studio space for the Department of Fine Art and Art History.

Lewis Archer McMurran, Jr. Hall is home to our superb liberal arts programs. Mary Brock Forbes Hall, our integrated science center, provides a 21st-century hub for education and discovery. Luter Hall houses the Luter School of Business; economics, sociology, social work and anthropology; leadership and American studies; mathematics; and physics, computer science and engineering.

State-of-the-art laboratories in computer science, computer engineering, physics, instrumentation and the natural sciences enhance the close interaction between professors and students.

CNU Village is home to numerous eateries — including Aago, Bob Bob, Panera Bread, Subway, and Tropical Smoothie.

The Freeman Center, for sports and convocations, features a 200-meter indoor track, three basketball courts and personal recreation/fitness space in the Trieshmann Health and Fitness Pavilion. The Freeman Center is one of the nation's finest facilities of its kind and recently underwent further expansion. The building now houses the 400-seat Gaines Theatre, as well as the James C. Windsor Center for Health and Counseling Services.

Surrounded by beautiful neighborhoods, CNU is a great place for walking, jogging or cycling, and you're only a few short blocks from the James River and a pleasant bicycle ride to a public white sand beach and park. CNU is also adjacent to pristine Lake Maury, surrounded by Mariners' Museum Park with 600 acres of trails and woodlands.

## JAMES C. WINDSOR CENTER FOR HEALTH AND COUNSELING SERVICES

Bill Ritchey, PsyD.  
Executive Director of Health and Counseling Services  
Freeman Center H230  
(757) 594-7047

UNIVERSITY HEALTH AND WELLNESS  
SERVICES  
Freeman Center, H155  
(757) 594-7661  
uhws@cnu.edu

THE OFFICE OF COUNSELING SERVICES  
Freeman Center H230  
(757) 594-7047  
cnu.edu/life/counseling

University Health and Wellness Services (UHWS) is a health-care partnership between CNU and the Riverside Health System. UHWS, through a contractual arrangement with Riverside, offers many services to support healthy living as well as helping students learn to take responsibility for their own wellness. Its main objective supports the CNU liberal learning mission through teaching a diverse student population how to assess their own health status, access medical resources, know their rights and responsibilities as patients, and become informed medical consumers. Professional support services are available to assist all graduate and undergraduate students when they become sick or injured.

### Free Clinic Services:

First aid  
Blood pressure monitoring  
Assistance in finding local physicians, dentists, psychologists, psychiatrists and other medical resources can be found on the UHWS Website: [cnu.edu/life/health](http://cnu.edu/life/health).

### Clinic Services Requiring a Fee:

All physicals and visits with the Nurse Practitioner-  
(by appointment only)  
Lab Tests  
Immunizations and injections  
Tuberculosis Screens and TB testing  
Flu shots  
Stitch and staple removal  
Allergy Injections  
Wound Care

### Free Health and Wellness Education Opportunities:

Educational materials and resources  
Nutrition and fitness counseling  
Health screenings

The Office of Counseling Services provides a wide range of free professional services to help students succeed at the University by creating a safe, confidential and supportive environment in which personal development can occur. Counseling services assist students with self-knowledge, facing challenges, confronting short-term personal issues, and through crisis intervention. All of our services contribute to helping students learn new skills, enhance personal success, set and achieve goals and get the very best out of life. Additionally, the office supports CNU faculty, staff, clubs and organizations, parents, and the community through consulting and educational outreach services.

Students are referred to resources outside the University when long-term counseling or other professional support is needed. Students are ultimately responsible for their decisions and actions and must assume responsibility for their personal choices. Using Counseling Services wisely will assist student's adjustment to the University and can help develop skills they will need to meet the various challenges a student may encounter. Listed below are many of the services offered through the Office of Counseling Services.

### Counseling Services:

Individual Counseling  
Crisis Intervention  
Relationship Counseling  
Support Groups  
Group Seminars and Workshops  
Referral Services

### Consulting Services:

Participation in the Captain's Care System  
Faculty/Staff Training

### Educational Outreach:

Classroom presentations  
Residence Life presentations  
Programming for clubs and organizations  
Community talks and workshops

## INFORMATION TECHNOLOGY SERVICES

Customer Service Desk  
Tribble Library 24/7 Room  
(757) 594-7079  
helpdesk@cnu.edu  
<http://its.cnu.edu>

Christopher Newport has committed to providing a robust technology infrastructure, which enhances the teaching and learning environment.

### Network Services

The University provides high-speed wireless Internet access in each residence hall student room. The campus also has wireless Internet throughout campus academic and administrative buildings.

### Online Services

The University intranet provides access to Google Workspace for Education including email, calendaring, video conferencing, and collaborative documents, CNU Live course registration, and the Scholar learning management system. Scholar allows students to interact with instructors, participate in video conferencing, submit assignments, take tests and quizzes, and view grade calculations.

### Support Services

Information Technology Services supports students and faculty by providing recommendations for computer purchases, support for university-provided applications, and assistance with connecting to the university network. The University also allows students to access the latest version of Microsoft Office on up to five computers as long as they remain students at Christopher Newport.

### Labs and Printing

Computer labs are available in the Tribble Library, McMurrin Hall, Forbes Hall, and Luter Hall. Labs run Microsoft Windows and provide a variety of application software including department-specific software and Microsoft Office. Printing is available from anywhere on campus using a mobile app or a computer with the Print Anywhere software. Printers are located in the Tribble Library, Luter Hall, McMurrin Hall, Forbes Hall, the Freeman Center, the David Student Union, and Ratcliffe Hall. See the Captains' Card Office for specific information on printing costs and locations.

## DISABILITY SUPPORT SERVICES

Student Affairs  
David Student Union 3127  
(757) 594-7160 Fax: (757) 594-8439  
dosa@cnu.edu

### Services for Students with Disabilities

Students with disabilities may consult with Student Affairs before or during their active enrollment at Christopher Newport University. New students, especially those who received accommodations in high school or at other post-secondary institutions, should contact the office well before beginning their first semester at CNU if accommodations are required. Students who request accommodations from the University must formally declare their disability by completing the Request for Services and Accommodations form obtained from the Office of the Vice President of Student Affairs and submitting appropriate supporting documentation. Consultation with the Director of Student Accessibility and Care Team Support is available and encouraged as part of the interactive process to identify the specific needs of an individual student and to determine reasonable accommodations.

In order to determine reasonable accommodations, students with disabilities must submit recent documentation which generally should be no more than three years old. Such documentation must be provided in writing from a qualified professional source. It should include the adult-normals test (instruments) used with scores, subset scores and suggestions for possible accommodations as they relate to the diagnosed disability. Appropriate accommodations cannot be provided without the necessary documentation. Accommodations are not retroactive; students are encouraged to submit documentation prior to the beginning of the term in order to be reasonably accommodated. Documentation should be submitted to the Office of the Vice President of Student Affairs. Evaluation information concerning a student's disability is private and will only be shared when there is a legitimate "need to know" or at the request of the student.

## CENTER FOR CAREER PLANNING

**Sarah Hobgood, Director**  
**Christopher Newport 305**  
**(757) 594-8887**  
**ccp@cnu.edu**

Christopher Newport University (CNU) recognizes career planning as a critical component in the education of its students. The Center for Career Planning (CCP) provides opportunities and support to engage students in exploring, discovering, evaluating and choosing academic programs and careers. Committed to the ideals of scholarship, leadership and service within a liberal learning environment, CNU understands the importance of preparing its students to become leaders and active participants in a global setting. The CCP supports students' transition to CNU in the clarification of academic focus and in the successful translation of credentials as preparation for additional graduate school and/or their career paths. CCP career coaches encourage students to participate in individual appointments, programs and activities that assist them in making educated career decisions, developing career-related skills, gaining career-related experiences and pursuing graduate study and/or professional employment. The Center also facilitates collaboration among students, alumni, employers, faculty, graduate school recruiters, and the community in developing a diverse global network, which supports attainment of students' career goals.

### **Career Development Topics:**

Academic Major Choice  
 Career Exploration  
 Interest and Personality Type Assessment  
 Internship and Job Search  
 (including a 1-3 credit(s) internship course)  
 Graduate School Planning  
 Interview Preparation  
 Resume and Cover Letter Writing  
 Networking

### **Developing a Diverse Global Network:**

1. Handshake at CNU, Online Recruitment Database
2. Internship, Job and Graduate School Fairs
3. Employer & Graduate School Information Sessions
4. On-Campus & Virtual Interviews
5. LinkedIn Training
6. Web-based Job Search Resources
7. Alumni Networking Opportunities
8. Career and Industry Panels
9. Employer Site Visits

### **Assistance for CNU Alumni:**

Career related appointments  
 Access to the Handshake at CNU  
 Participate in career fairs and other events hosted by the CCP

## STUDY ABROAD

**Amanda Pierce, Director**  
**David Student Union 180**  
**(757) 594-8851**  
**studyabroad@cnu.edu**

All academically qualified CNU students are encouraged to participate in study abroad, and may do so for a full academic year, a semester, or during extended summer session. Participation in any study abroad endeavor must be approved by university officials. Students may study for a semester or for a full year through CNU programs, partnerships or affiliations; through direct application to a university overseas; or through other approved sponsoring universities or organizations. Coursework earned through non-CNU program providers must be approved prior to the study abroad term. CNU faculty lead a number of outstanding short term programs during summer session. Students are eligible to participate in these programs if they:

- demonstrate good academic and social standing at the University;
- are 18 years or older by the first day of the intended semester or summer abroad;
- enroll in and complete the associated course.

Financial Aid may be available to students who participate in a study abroad semester or academic year. The Office of Financial Aid will guide students in processing aid, but early planning is a must – the student should schedule an appointment with the Office of Financial Aid as early as possible in the study abroad planning process.

**PAUL AND ROSEMARY TRIBLE LIBRARY**

Mary K. Sellen, University Librarian  
(757) 594-7130  
library@cnu.edu

**Library**

The Paul and Rosemary Tribble Library is the intellectual center of CNU. The collections are built to support and enhance the essential elements of the university's curriculum while also giving students resources and equipment to further their intellectual and personal growth.

The Library combines the best of a traditional library with the best of a 21st century technology center to create an interactive learning experience for all. There are quiet reading rooms, individual and group study rooms, media production suites, as well as classroom and theater spaces which host academic and literary events. In addition to a café and a technology help desk, the library houses print and media collections which are open and readily available for browsing. Nine professional librarians and twelve library assistants are ready to give students and faculty help with, and access to, the Library's collections and services.

**Reference**

The Library offers professional reference service in person, by phone, email, and online. The services also include private consultations on research papers and projects. In addition to the extensive print collection inside the building, the library's web page ([cnu.edu/library](http://cnu.edu/library)) connects its users with hundreds of thousands of ebooks and millions of scholarly resources found in almost 300 online databases. Business, law, economics, science, art and music, and social science are just some of the disciplines covered by these collections.

**Media Services**

On the second floor of the library, the Media Center helps students with a multitude of creative endeavors. The latest software and equipment for scanning and digitizing, audio and video production and editing, as well as photography are available. The trained staff are able to help make use of these resources effectively and efficiently.

**Interlibrary Loan**

For materials that the Library doesn't have, the Interlibrary Loan service works to provide access to books, journals, magazines, and media from around the country. Through this and other Virginia library consortia arrangements, the library resources available to students and faculty may seem limitless.

**Special Collections**

The archive and special collections of the library include institutional and historical documents dating back to the founding of the college in the 1960's. Faculty and student publications are preserved along with the Captain's Log newspaper and college catalogs. Selected items from these collections may be viewed online from the SAIL page ([sail.cnu.edu](http://sail.cnu.edu)) including the Hampton Roads Oral History Project. Several sheet music collections dating back into the 1800's and a Virginia Author's Collection of autographed books are cataloged and kept in the archives. Available in-house, all of these collections provide faculty and students with valuable insights and research opportunities.

## ADMISSION TO GRADUATE STUDIES

Office of Graduate Admission  
Trible Library 243  
(757) 594-8585  
gradstudy@cnu.edu

### ADMISSION TO GRADUATE STUDIES

There are two ways to apply for admission to graduate studies. If you are in your senior year or have earned a bachelor's degree at an institutionally accredited institution with a 3.0 grade point average, apply to our **Traditional Master's** program. If you are a CNU junior (65 hours completed) apply to our **Bachelor's to Master's Five-year program**, which allows qualifying CNU undergraduates to begin taking graduate classes in the senior year, complete their bachelor's degree and stay to earn their Master's degree.

The decision to admit an applicant to graduate studies at Christopher Newport University is determined by the graduate faculty members in the appropriate academic department(s). Graduate Admission collects the application materials and submits the complete application packet with all required documentation to the appropriate Graduate Program Director (GPD). The decision is made by the GPD and the graduate faculty members in their department and returned to Graduate Admission. An admission decision letter is sent to the applicant.

**Applicants must read the information regarding the master's degree program to which they are applying for specific admission and academic requirements.** MS students may be admitted to the University for full or part-time study beginning the fall or spring semesters or any summer term. MAT students may be admitted to the University for full or part-time study beginning Summer Term I or the spring semester (traditional applicants only). MFinA students are admitted in the Fall semester only. Applicants are encouraged to apply and submit all documents well in advance of the admission deadline corresponding to the semester/term in which they plan to enroll.

### ADMISSION REQUIREMENTS

#### Application and Fees

Applicants must electronically submit a completed *Graduate Application*, the *Application for Virginia In-State Tuition Rates* (if the applicants wants to be considered for in-state tuition) and the appropriate non-refundable application fee, if required. The *Graduate Application* is online and available on the Graduate Studies website at: [cnu.edu/admission/graduate](http://cnu.edu/admission/graduate).

#### College Records

Applicants must submit an official transcript of their baccalaureate degree from an institutionally accredited college or university. The transcript must indicate the date of the applicant's graduation, the degree received, and a complete list of courses taken with grades received. Official transcripts of all graduate work taken at other institutions must be submitted, also.

### Grade Point Average

Degree-seeking and non-degree applicants must have a baccalaureate degree from an institutionally accredited college or university. A minimum grade point average (GPA) of 3.00 on a 4.00 scale is required for degree-seeking applicants to APCS, MAT, and MFinA programs. For ENVIS applicants the GPA is taken into consideration during the selection process, but a 3.0 GPA is not a requirement for initiating an application. MAT students applying to the Initial Licensure program apply in a non-degree status and must have a baccalaureate degree from an institutionally accredited college or university with a minimum GPA of 2.80 on a 4.00 scale.

### Educational and Professional References

Degree-seeking applicants to the **traditional program** to the MS or MAT program must provide three recommendation forms completed by persons (e.g., professors) qualified to judge the applicant's potential to complete the graduate program successfully. The MFinA and Bachelor's to Master's MS and MAT Five Year Programs require two recommendation forms. The recommendation forms are part of the electronic application. If a recommendation form has to be submitted in paper form, it must include the evaluation of dispositions or abilities and be received by CNU Graduate Admission in a sealed envelope with the recommender's signature written across the envelope flap. Reference letters without the evaluation of dispositions or abilities are not adequate.

### Entrance Examinations

Examination scores are used as one of several indicators of the applicant's ability to succeed in graduate studies. The Graduate Record Examination, Praxis Core, VCLA, and PRAXIS II are offered on an individually scheduled basis through the Prometric Testing Center: [www.prometric.com](http://www.prometric.com). **Refer to the master's degree program section in this catalog for the specific examination requirements.**

### SUBMISSION OF APPLICATION MATERIALS

All application materials are to be submitted electronically, unless stated otherwise to: CNU Graduate Admission; 1 Avenue of the Arts; Trible Library 243; Newport News, VA 23606-3072

- To determine the status of your application package, email [gradadmit@cnu.edu](mailto:gradadmit@cnu.edu).
- **Applications cannot be processed until the non-refundable application fee and all documents have been received.**



### Non-degree Status

Applicants approved to take graduate courses apart from any program leading to a graduate degree may be admitted as non-degree students. Such students earn academic credit in the same manner as degree-seeking students, and prerequisites for individual courses must be met unless excused by the Graduate Program Director. Credit received as a non-degree graduate student may be applied to a graduate degree if and when the student becomes a degree-seeking graduate student. A maximum of 12 credits may be earned while in non-degree status with the exception of those in the Initial Licensure program.

#### Admission Requirements for Non-degree Status

- Completed electronic *Graduate Application*
- \$65 Non-refundable Application Fee
- Completed *Application for Virginia In-State Tuition Rates* if applying for in-state tuition rate eligibility
- Official baccalaureate transcript from an institutionally accredited college or university, indicating the successful completion of all degree requirements and listing all courses taken with grades received.
- Minimum GPA as determined by the program
- Official graduate transcripts for other graduate work.
- Recommendation forms and examination scores are not required for the non-degree applicant unless applying to the Initial Licensure program.

#### Changing from Non-degree to Degree-seeking Status

In order to petition for the change in status a non-degree student must submit to Graduate Study the *Request for Status Change to Degree-seeking Status* form. All required documentation for degree-seeking status within a specific master's degree program must be on file. In addition, the non-degree student must present their CNU transcript and meet the following criteria for the specific master's degree program:

### MAT

Completion of at least 12 hours of MAT graduate courses with a cumulative 3.0 GPA or above and submission of a passing score for the Praxis II exam, if required.

### MFinA

Completion of 12 hours of CNU graduate credits with a minimum cumulative 3.0 GPA, a status of Good Academic Standing, and submission of the Graduate Management Admission Test (GMAT).

### APCS

Completion of 12 hours of CNU graduate credits with a minimum cumulative 3.0 GPA, a status of Good Academic Standing, and submission of passing scores from the Graduate Record Exam.

### ENVS

Completion of 12 hours of CNU graduate credits with a minimum cumulative 3.0 GPA, a status of Good Academic Standing.

The amount of credit received as a non-degree student which is applicable toward a graduate degree will be determined by the appropriate Graduate Program Director at the time the student changes to degree-seeking status.

#### Teachers in the Commonwealth of Virginia Applying for Graduate Non-degree Status

Any regular or provisionally licensed Virginia teacher who desires to enroll in a graduate course for relicensure or continued professional development does so in a graduate non-degree status. This status allows a teacher to enroll in a graduate (500 - 600 level) course at the University, as long as the prerequisites have been met. Registration is on a space-available basis, after registration of currently enrolled students. Graduate classes will be posted on a graduate transcript with the grades and associated graduate credit hours earned.

#### Admission Requirements for Virginia Teachers in Non-degree Graduate Status

- Completed electronic *Graduate Application*
- \$65 Non-refundable Application Fee
- Completed *Application for Virginia In-State Tuition Rates*
- An official transcript must be submitted verifying that the baccalaureate degree was completed.

Transcripts should be sent to:

Graduate Studies  
Tribble Library 243  
Christopher Newport University  
1 Avenue of the Arts  
Newport News, VA, 23606

**INTERNATIONAL STUDENTS**

Christopher Newport University welcomes applications from prospective international students. If you are not a U.S. citizen or permanent resident, you are considered an international student. All international students must obtain either a student visa, or demonstrate current visa status that permits study in the U.S. Below outlines the application process and steps to be taken after being admitted to one of Christopher Newport University’s four graduate programs.

**Admission Deadlines**

Applications cannot be processed until the non-refundable application fee and all documents have been received. **The application, the application fee, and all supporting documents must be received by Graduate Admission by the following deadlines:**

<u>Semester/Term of Entry</u>	<u>Deadline</u>
Fall Semester	April 1
Spring Semester	September 1
Summer Term 1	December 1

MAT program does not permit admission for the fall term - only spring and summer I terms. In addition, MFinA requires all students to start their graduate studies in the fall semester.

**Admission Requirements for International Students**

An international student must apply as degree-seeking by submitting the specific documents required by the master’s degree program of choice and the additional materials below, as appropriate. An international applicant who is not a U.S. citizen is required to:

1. Submit a *Graduate Application for* with the required non-refundable \$65 application fee.
2. Submit all documents required for degree-seeking admission in the specific master’s degree program by the admission deadline. **Refer to the master’s degree program website or Graduate Catalog for program specific materials.**
3. Submit official baccalaureate transcript and transcript(s) of any graduate work. If these documents are not in English, an official course-by-course credential evaluation is required from a current NACES member agency (e.g., World Education Services, WES).

Those international students interested in admission to our Master of Arts in Teaching program that leads to a Virginia Department of Education Teaching License must use one of the following credential evaluation services:

- World Education Services (Preferred)
- Center for Education Documentation
- Institute of Foreign Credential Services (IFCS)
- Foreign Consultants, Inc.

- International Education Research Foundation
- Foundations for International Services, Inc.
- Josef Silney and Associate, Inc.
- Global Credentials Evaluators
- SpanTran Educational Services
- International Consultants of Delaware

4. Demonstrate proficiency in the English language through the following options:
  - (a) Minimum score on an approved English Proficiency Exam.
  - Approved English Proficiency Exams and Minimum Scores for Acceptance

Exam	Minimum Score
TOEFL – Internet-Based Test	92
TOEFL – Computer-Based Test	237
TOEFL – Paper Test	580
IELTS	7
Duolingo English Test (DET)	120
Global Test of English Communication (GTEC CBT)	1200
International Test of English Proficiency (FTEP)	4.0
Pearson Test of English (PTE Academic)	65
Michigan English Test (MET)	
Trinity Integrated Skills in English (ISE)	ISE III merit Skills

(these scores are based on the Common European Framework of Reference)

- (b) An earned Bachelor’s or higher degree from an accredited college or university in the U.S.
- (c) An earned Bachelor’s or higher degree from a college or university outside the U.S. in which English is recognized as the official language of instruction.

An interview may be required. English proficiency in reading, writing, and speaking is expected.

**Required After Admittance**

Complete a *Financial Resource Statement* and provide an official bank affidavit and other supporting documents guaranteeing that adequate funds are available prior to the issuance of the I-20 form. Communications regarding Visas will come from our International Office.

**CONTACT INFORMATION**

Questions pertaining to the four graduate programs and thesis development are directed to Graduate Studies located in Triple Library 243, email at gradstudy@cnu.edu, phone: (757) 594-8585.

Questions concerning the application process are directed to Graduate Admission located in Triple Library 243, email at gradadmit@cnu.edu, phone: (757) 594-8585.

## GRADUATE ACADEMIC POLICIES

### IMMUNIZATION REQUIREMENT

In an effort to provide a healthy environment in which to live and learn, Christopher Newport University has created an immunization policy that incorporates the guideline for immunizations set forth in the *Code of Virginia*, Section 23-7.5. Students may have received these immunizations as a child or later in life. **All entering full-time students must provide a completed *Certificate of Immunization*, which must be signed or stamped by a licensed health care professional.** Failure to do so will result in the student's inability to register for and attend the next semester at Christopher Newport. In some cases, students may sign a waiver of the recommended immunization and be in compliance with the University and state policy. The *Certificate of Immunization* form is required of all new students when they are admitted to the University. The form may be obtained from the Office of the Registrar website at: [cnu.edu/registrar/forms](http://cnu.edu/registrar/forms) or by contacting the Office of the Registrar, Christopher Newport Hall, Christopher Newport University, 1 Avenue of the Arts, Newport News, VA 23606-3072. Questions about this requirement or the waiver should be directed to the Office of the Registrar at (757) 594-7155 or via email at [immunizations@cnu.edu](mailto:immunizations@cnu.edu).

### CONTINUOUS ENROLLMENT POLICY

All students enrolled in graduate degree programs must enroll each regular semester for a minimum of one graduate credit hour. This registration must continue with no breaks from the semester of admittance to graduation. This policy does not include summer sessions. The policy allows students to maintain active status with the University and to access University resources, including the library, email, laboratories, etc. Additionally, this policy is designed to enhance faculty mentoring and encourage student degree completion within the time limitations specified by the graduate programs.

Students must be enrolled in courses relevant to their graduate program every fall and spring semester until graduation. This includes the ability to register for thesis credit hour(s) for those students working towards the completion of their thesis.

Students who fail to maintain continuous enrollment will relinquish their graduate standing in the University. Students who wish to be reinstated will be required to re-apply for graduate admission and pay the application fee.

### Appeal Process

In extenuating circumstances, graduate students may petition for an exception to the continuous enrollment policy. Graduate students who wish to request an exception for personal, academic, military, or other reasons may do so by submitting an appeal to the Graduate Studies office. Documentation supporting the extenuating circumstance must accompany the appeal form. Students must submit

appeals to their Graduate Program Director. Appeals will only be considered for exceptions to the policy for a specific period of time, i.e. one semester or one year; not to exceed one year at a time. Retroactive appeals may not be approved. Please note that submission of an appeal does not guarantee an approved exception to the policy. Petitions will not be considered when a semester is underway. In those instances, students should pursue a regular withdrawal for medical, administrative and/or military reasons (See **Medical, Administrative and Military Withdrawals** section of this catalog).

If approved, students on appeal are prohibited from registering and completing any academic degree requirements during their leave. Appeal approvals will not extend time limits for completion of degrees. If a student wishes to return to academic study before the end of the approved separation period, the Dean of Graduate Studies must be notified in writing so that the separation is cancelled.

### REGISTRATION

The University's registration system is a Web-based registration procedure. Dates and times for registration periods are published on the Office of the Registrar website prior to each semester/term (Fall, Spring and Summer). A student must be admitted as a graduate student to receive graduate credit.

Registered students should log in to their CNU Live account to review their charges. The balance must be paid by the deadline noted on the online billing statement and announced on the CNU Business Office website. Students are not considered officially registered until tuition and fee payments have been received in the Business Office. The University reserves the right to cancel registrations if bills are not paid.

Newly admitted students are expected to meet with their graduate academic advisors prior to registration to discuss class scheduling, and are expected to attend the orientation programs when scheduled by their respective Graduate Program Directors.

Students who have a 'hold' on their account may not register or make any schedule adjustments (including adds, drops, and/or course withdrawals) for courses until the 'hold' has been resolved with the office issuing the hold.

**Students are also responsible for ensuring that they have met the appropriate course prerequisites for entrance into a course.** Students who have not met the course prerequisites and/or registration restrictions, as detailed in this catalog, will not be allowed to register for the course without special permission.

**Schedule Adjustment (Add/Drop)**

After registering for classes, students may make changes to their class schedules via the 'CNU Live' link within their 'MyCNU' account during published schedule adjustment periods. If a student has a 'hold' on their account, they will not be able to make schedule adjustments until the 'hold' has been resolved with the appropriate office. Schedule adjustment periods are published on the Office of the Registrar website. Courses dropped during this period do not become part of the student's permanent academic record.

**Withdrawal from a Course**

During the withdrawal period, students may withdraw from a course by completing a *Withdrawal from Course* form through CNU Live. A student who stops attending a class and who does not complete a *Withdrawal from Course* form will be assigned the earned grade in that course. Course withdrawal periods are published on the Office of the Registrar's website and in the academic calendar. A total number of 3 course withdrawals (grades of *W*) are permitted during a student's graduate academic career at Christopher Newport. Course withdrawals will be recorded with a grade of *W* on the student's academic record; course withdrawals in excess of three will be recorded with a grade of *F* on the student's academic record and computed as such in the student's grade point average. If a student has a 'hold' on their account, the student will not be able to withdraw from courses until the 'hold' has been resolved with the appropriate office. Note that if the 'hold' has not been resolved by the end of the course withdrawal period, the student may not withdraw from that course. A student may initiate an appeal by submitting a letter of appeal to the Dean of Graduate Studies.

**Withdrawal from a Semester**

Students who wish to withdraw from all courses after the final add/drop period must complete a *University Withdrawal* form and submit it to the Office of the Registrar by the withdrawal deadline. Courses withdrawals included in a semester withdrawal still count towards the allowed three (3) course withdrawals (grades of *W*).

**Medical, Administrative and Military Withdrawals**

Students who appeal to withdraw from the semester after the final add/drop period for medical reasons (*medical withdrawal*) must complete a *University Withdrawal Form* and submit a letter to the Office of the Registrar outlining the justification for the request. Requests for medical withdrawals should be submitted as close as reasonably possible to the incident/situation causing the need for the withdrawal. The student must also provide a written statement on official letterhead from their physician (MD or DO) certifying that the student is incapable of completing the term due to medical reasons. Appeals for medical

withdrawals which are received after the last day of regular classes will be considered late and must have a written statement by the student indicating the compelling reason for the late request. Late requests are strongly discouraged and will be considered on a case by case basis; only those requests involving exceptional, well-documented circumstances which could not have been addressed earlier in the semester will be considered. After the Office of the Registrar receives all required documentation, a review committee will begin a thorough review of the student's request and determine the appropriateness of the medical withdrawal. After the review has been completed, the review committee will approve or disapprove the request, and the student will be notified in writing of the decision. If the request is approved and the student wishes to return to the University for a future term, the student will need to provide written documentation from the treating physician (MD or DO) that the student is eligible to return to full-time study. It is extremely rare that two medical withdrawals will be approved. It is also rare that a request for a medical withdrawal received near the end of a term or after a term has ended will be approved or that a medical withdrawal will be approved retroactively for a previous period of enrollment. In such extreme instances of physical incapacitation, additional documentation from the physician (MD or DO) and the student will be required to justify the lateness of the appeal and the extenuating circumstances contributing to the need for the withdrawal.

In other extenuating (non-medical) circumstances requiring the student to withdraw from the semester, the student must complete a *University Withdrawal Form* and submit a letter outlining the extenuating circumstances along with justification for an *administrative* withdrawal. Requests for an administrative withdrawal must be submitted to the Office of the Registrar for approval by an appropriate university official (the student's academic dean, the Vice President for Enrollment and Student Success, or the Provost). After the appropriate university executive administrator has reviewed the request and made a decision, the Office of the Registrar will notify the student in writing of the decision. Students may not have two administrative withdrawals approved. It is extremely rare that more than one administrative withdrawal will be approved during a student's entire academic career at Christopher Newport or that an administrative withdrawal will be approved near the end of a term, after the term has ended, or retroactively for a previous period of enrollment.

If the appeal for medical or administrative withdrawal is approved, all grades for the semester in question will be noted as **M** on the student's transcript, and the student will earn no credit for that term. The **M** grades will not be counted toward the maximum course withdrawals permitted and is not computed in the student's GPA. Students may

not exercise the medical/administrative withdrawal option to withdraw from individual courses.

Students who are called to active duty (deployed) after the final drop/add period may pursue a *military* withdrawal from all courses. Students should complete a *University Withdrawal Form* along with a copy of their official military orders calling them to active duty and forward both to the Dean of Graduate Studies and the Office of the Registrar for approval and processing. Students who have reached the ninth week of a regular semester should contact the Dean of Graduate Studies for assistance in securing grades of *I* (Incomplete) in their courses whenever possible. Except in cases where students have received authorization for grades of *I*, all grades for the semester in question will be noted as *M* on the student's transcript. The *M* will not be counted toward the maximum number of course withdrawals permitted and will not be computed in the student's grade point average (GPA).

### Auditing a Course

Students auditing courses are subject to attendance regulations specified by the instructor but are not required to take tests or final examinations in the audited courses. By permission of the instructor, students may complete any of the required assignments. Rather than the regular letter grade at the completion of an audited course, auditing students' academic records will indicate *AU* for such courses. (See "Fees and Financial Information" for additional details concerning audit charges.) **Changes from audit to credit status and credit to audit status may be made only during published Schedule Adjustment periods and in compliance with established deadlines.**

### Advanced Topics (SUBJ 595)

Course topics are selected on the basis of faculty and student interests. Students may take a maximum of 3 credit hours of a topics course in a given semester, and a maximum of 9 credit hours in their total academic program. If more than 9 credit hours are taken, only the last 9 count toward the degree.

### Independent Study (SUBJ 599)

The purpose of independent study is to enable qualified students to enrich their programs through directed reading or independent research under faculty supervision and for University credit. The student and faculty member directing the Independent Study agree upon goals, prerequisites, stages and grading procedures in writing. Students may take a maximum of three credit hours of independent study in a given semester or session, and a maximum of six credit hours in their total academic program.

The graduate *Independent Study Authorization Form* is available for current students on the CNU Graduate Studies website and can be accessed by logging in, at:

<https://my.cnu.edu/gradstudies/current/> listed as *Graduate Independent Study* under Forms and Documents. It must be completed by the student and the faculty member directing the Independent Study. Within five days of being signed by both parties, the *Independent Study Authorization Form* must be forwarded to the appropriate Graduate Program Director and the chair of the department. Send the completed form to [gradstudy@cnu.edu](mailto:gradstudy@cnu.edu). The Dean of Graduate Studies will forward the approved form electronically to the Office of the Registrar. If presented in paper form, the student must then present the approved form to the Office of the Registrar no later than the end of the registration period or the schedule adjustment period for the semester/term in which the Independent Study is to occur. Incomplete forms and forms submitted after the registration and/or the schedule adjustment period will not be processed.

### Class Attendance

The University expects that students will regularly attend all of their scheduled classes. An educational system based largely upon classroom instruction and analytical discussion depends upon the faithful attendance of all students. The University does not, however, establish specific attendance policies. These are established at the discretion of the individual colleges, departments and/or instructors. Students with excessive absences will receive a grade of *F* upon the instructor's recommendation. If excessive absences are caused by an extreme emergency and the instructor penalizes the student, the student may appeal the grade through the Grade Appeal Policy (see *Student Handbook* for details).

### Other regulations are:

- 1) Missing a class meeting does not in any way lessen the student's responsibility for that part of the course that has been missed.
- 2) Instructors may differentiate between excused and unexcused absences and authorize makeup tests when appropriate.
- 3) Students who miss classes to represent the University must notify the class instructors in advance of those absences. Given prior notice, instructors will allow students to make up class work or complete work in advance of the class absence. In cases of disagreement about whether or not the activity represents the University, the Dean of Graduate Studies will make the determination.
- 4) Student who receive federal financial aid and who discontinue class attendance without formally withdrawing

from the course(s) may jeopardize current and/or future financial aid awards. The student should contact the Office of Financial Aid for more information.

### Final Examinations

The examinations given at the end of each semester take place at times announced on the examination schedule published on the Office of the Registrar website. Exams may not be completed on the University Reading Day. Students are required to take all final examinations at the times scheduled unless excused as noted below (see *Absence from Final Examinations*). The University does not authorize re-examination nor will changes be permitted unless the student has three or more examinations in a 24-hour period.

Students with more than two examinations scheduled on a single day may request to have any additional examination(s) rescheduled. Such requests must be directed to the instructor(s) before the final exam period begins; at their discretion, instructors may resolve such conflicts using the conflict resolution period (but not the university reading/study day) or by other arrangement, such as allowing the student to take the exam in another course section or re-scheduling the latest final on a given day. Students with other verifiable conflicts that would force a rescheduling in the exam time may request such a change but the request must be approved by the dean after student consultation with the instructor and/or department chair.

### Absence from Final Examinations

A student may be excused from taking an examination at the scheduled time by prior approval of the instructor. The student may be excused on the grounds of illness when it is verified by a physician and received by the instructor or department chair. The instructor must be notified as soon as possible if illness or any other emergency causes a student to be absent from an examination. If the instructor cannot be notified because the student is physically unable to do so, the Office of the Registrar must be notified as soon as possible and the Office of the Registrar will contact the instructor. Verification is required.

## ACADEMIC STANDARDS

### Grade Point Average

The cumulative GPA is the total number of grade points earned for all CNU courses divided by the total number of CNU credit hours attempted. Transfer credit (including that for five-year students) is not included in the grade points and credit hours attempted; however, transfer credit is included in credit hours earned toward a degree.

### Grading System

<u>Letter Grade</u>	<u>Meaning</u>	<u>Numerical Value</u>
A	Excellent	4.00
A-		3.70
B+		3.30
B	Good	3.00
B-		2.70
C+		2.30
C	Passing (Poor)	2.00
C-		1.70
F	Failing	0.00
I	Incomplete	
W	Withdrew	
S	Satisfactory (for thesis in progress)	
U	Unsatisfactory (for thesis in progress)	
UI	(Failing)	0.00
Z	(Grade for 0 credit lab)	
AU	Audit	

**NOTE: Graduate courses may not be taken on a pass/fail basis.**

### Incomplete Grade

The grade of Incomplete, *I*, is a temporary grade that the instructor may assign when exceptional, documented circumstances prevent the student from completing required assignments or from taking the final examination. If the grade of Incomplete is assigned, the student must complete the work and the professor must submit the *Grade Change Form* (or *Extension of Incomplete Form*, if appropriate) to the Office of the Registrar by the third Friday of the next regular semester. If a *Grade Change Form* or *Extension of Incomplete Form* is not submitted as indicated, the grade of *I* automatically will be converted to a grade of *F* on the following business day. The change of grade deadlines are:

- Incomplete grades given in the fall must be removed by the above indicated deadline in the following **spring** semester.
- Incomplete grades given in the spring must be removed by the above indicated deadline in the following **fall** semester.
- Incomplete grades given in the summer must be removed by the above indicated deadline in the following **fall** semester.

Extensions of the grade of Incomplete require the signature of the Dean of Graduate Studies.

### Grade of Satisfactory/Unsatisfactory

A grade of Satisfactory (*S*) or Unsatisfactory (*U*) will be given for thesis credit while the thesis is in progress. After the thesis has been written, defended and accepted, the thesis advisor will replace the *S* and/or *U* designation with a grade of numerical value. Until that time, the *S* or *U* designation assigned for thesis work in progress will

not affect the student's grade point average. Thesis credit beyond the minimum required by the program will remain with an *S* and/or *U* designation.

### Grades for Repeated Courses

For courses that are repeated, only the grade, credit and grade points for the **most recent** course enrollment will be counted toward graduation requirements, credit hours earned, and included in the computation of grade point averages. Any graduate course taken at CNU in which a grade is earned may be repeated no more than once (total of two enrollments). Graduate courses completed at CNU with a grade of *C* or *F* cannot be repeated at another institution for transfer credit to CNU. Students who, after their second attempt, do not successfully complete a course required for a specific degree at CNU may not be allowed to graduate with that degree.

### Final Grade Reports

Students may access their final grade reports by accessing their web-based 'MyCNU' account and clicking on the 'CNU Live' link. Final grades are available at the end of each semester and summer terms.

### Request to Take Classes Elsewhere

Admitted students are expected to complete all of their course work in residence. In those unique situations when a student seeks to enroll in credit courses at another institution concurrently, the student must obtain **advance approval** from the University by submitting the *Request to Take Graduate Course Elsewhere* form, available for current students on the CNU Graduate Studies website by logging in, at: <https://my.cnu.edu/gradstudies/current/> under Forms and Documents. Students must submit the completed form, including all required signatures, to Graduate Studies, [gradstudy@cnu.edu](mailto:gradstudy@cnu.edu). The University grants students permission to take courses for credit at other institutions only when such action is academically necessary to meet scheduling requirements of their programs that cannot be met in residence at CNU.

Transfer credits for courses taken elsewhere will be granted only if the student has prior written approval and earns a grade of *B-* or better. Pass/fail grades are not accepted for transfer credit. A graduate student is limited to a maximum of twelve credit hours that may be transferred into the University.

Degree-seeking students who are on academic probation or academic suspension will not be approved to take courses elsewhere without written permission from their Graduate Program Director and the Dean of Graduate Studies. Credit hours earned elsewhere while on probation or suspension will not be accepted for credit by Christopher Newport University unless prior written permission was granted.

### Graduate Students Taking Undergraduate Courses

A graduate student may enroll in a course that carries undergraduate credit if, in the graduate advisor's opinion, the student should be familiar with the subject matter of that course. A student registered for a course for undergraduate credit must complete all the requirements of the course and receive a grade for it. The grade will be noted on the graduate record but will not count toward a graduate degree nor be computed in any graduate grade point average.

A graduate student may take an undergraduate course on a pass/fail basis with the written approval by the Graduate Program Director. A maximum of two courses are allowed, and limited to one course per semester.

### Course Numbering

Courses numbered 500 through 699 may be applied to a graduate degree. Courses numbered 400/500 may be taken at either an undergraduate or graduate level. Additional work and/or a higher standard will be required for those taking a course at the 500 level. A student who has taken a course numbered 400/500 as a 400-level course may not retake it as a 500-level course unless approved by the Dean of Graduate Studies.

The three hyphenated numbers enclosed in parentheses following the title of the course, (4-3-4) for example, have the following meanings: the first number refers to the number of credit hours awarded for successful completion of the course; the second number refers to the number of weekly lecture hours in the course; and the third number refers to the number of weekly laboratory or practicum hours in the course.

## ACADEMIC PERFORMANCE POLICIES

### Minimum Standards for Academic Continuance

The University expects a degree-seeking student to make reasonable progress toward earning a degree. Both degree-seeking and non-degree-seeking students must remain in 'good standing' for academic continuance at the University. Good academic standing is defined as having a cumulative GPA of greater than or equal to 3.0 and being in non-probationary status. Academic performance is measured by the grade point average (GPA), and graduate students are expected to maintain a cumulative grade point average of 3.0 for each semester for which the student is enrolled. In addition, graduate students are expected to earn grades of *B-* or higher.

Attempted credit hours are defined as those hours for which a student has enrolled in and earned a permanent grade. Attempted credit hours are cumulative.

Academic status is assessed at three points each year: the end of fall semester, the end of spring semester, and the end of the summer term(s).

### Academic Probation

If a degree-seeking student is not making satisfactory progress toward a graduate degree when academic status is assessed that student may be placed on academic probation. Degree-seeking and non-degree students will be placed on academic probation for:

- a cumulative graduate grade point average below 3.0; or
- more than six credit hours of *U*.

The notation *Academic Probation* will appear on the student's web-based grade report and their permanent academic record. A student who is on academic probation will be required to raise their grade point average above 3.0 or to earn at least a grade of *B* - in all graduate courses attempted in the next semester of enrollment in order to avoid being placed on academic suspension. The *Academic Probation* notation will appear for each semester until the student is in good standing. Credit for courses taken at other institutions while on probation will not be transferred to CNU.

### Academic Suspension

Graduate students will be suspended following the first semester in which they do not meet the minimum standards for continuance. Degree-seeking and non-degree-seeking students will be placed on academic suspension for:

- a cumulative graduate grade point average below 3.0 for a second consecutive semester; or
- one grade of *F*; or
- nine or more credit hours of *U*.

The notation *Academic Suspension* will appear on the student's web-based grade report and their permanent academic record.

A suspended student is not permitted to register for additional credits in any semester or summer term until the conditions of the suspension are completed. The student may not register for any classes until after the next regular semester (i.e., fall or spring) following the suspension, and may not register for summer terms if the suspension includes the following fall semester. Credit for courses taken at other institutions while on suspension will not be transferred to CNU.

Students who wish to return to CNU after their one semester of suspension must:

- make an appointment to develop a Plan of Study with their Graduate Program Director before November 1 for a return in the spring semester and before April 1 for a return in the summer or fall semester;
- include in the Plan of Study credit hour limits the student must observe and a schedule of courses to be taken each semester following the suspension;
- register for the semester immediately following their suspension semester, not including summer terms.

Upon reinstatement, the student will be on academic

probation. If a student who has been reinstated receives a *U* grade or a grade lower than *B*- in any graduate course, that student will be suspended from the University.

If the student follows this Plan of Study and earns a GPA of 3.0 or higher and earns no grade of *F* or any additional grade(s) of *C*, then the student will not be suspended the next semester even if the cumulative GPA is below that required for minimum standing. However, the student will remain on academic probation. If the student does not follow the Plan of Study, or does not earn a GPA of 3.0 or higher in each subsequent semester, the student will be suspended from the University.

Academically suspended students who do not return for two or more consecutive semesters (not including summer terms) must apply for readmission through Graduate Admission. These applications will be judged by the graduate admission standards current at the time of application for readmission.

### Academic Dismissal

Students who fail to meet minimum standards for continuance will be academically dismissed from the University. Degree-seeking and non-degree-seeking students will be academically dismissed for:

- a second academic suspension; or
- two or more grades of *F* during one semester

Students who have been academically dismissed may not apply for readmission to the University for at least two calendar years. Such applicants' academic records at CNU will be considered as part of the relevant materials for readmission to the University. The notation *Academic Dismissal* will be placed on the student's web-based grade report and their permanent academic record.

### Appeal Process For Suspension or Dismissal

A suspended or dismissed student may initiate an appeal for immediate reinstatement by submitting the *Graduate Student Appeal for Immediate Academic Reinstatement* and all supporting documents to the Graduate Studies office. The appeal must be received at least two weeks prior to the beginning of the semester for which the student seeks reinstatement. The Graduate Studies office forwards the appeal and documentation to the Dean of Graduate Studies.

- On receipt of the appeal, the Dean of Graduate Studies selects a committee of not more than three members of graduate faculty – for most cases, this committee will be the Graduate Program Directors.
- This committee reviews the student's record and the evidence contained in the appeal and recommends acceptance or rejection of the appeal for immediate reinstatement.

- The committee forwards its recommendation to the Dean of Graduate Studies who will render a final decision on the appeal.
- The Dean of Graduate Studies notifies the student of the decision and, in those cases where the student is reinstated, notifies the Office of the Registrar and the Graduate Studies office.
- A student whose appeal is accepted meets with their Graduate Program Director to develop a Plan of Study, which is submitted to the Dean of Graduate Studies.

Upon reinstatement, the student will be on academic probation. If a student who has been reinstated receives a grade of *C*, *F* or *U* in any graduate course, that student will be suspended. After two suspensions, the student is dismissed.

An academically suspended student whose appeal is rejected must follow the requirements listed under the heading ‘Academic Suspension.’ A dismissed student whose appeal is rejected must wait at least one year to appeal again.

## DEGREE REQUIREMENTS

The following represent the minimum University requirements for the master’s degree. Individual programs may impose additional requirements.

### Credits

To receive the master’s degree, all graduate students, including those enrolled in the five-year bachelor’s to master’s programs, must present on the graduate transcript successful completion of a minimum of 30 hours of graduate credits. However individual programs may require additional hours. No more than twelve semester hours of graduate credit may be transferred from another institutionally accredited institution and/or be taken elsewhere by a degree-seeking student as described below. Credit transferred from another institution will be counted toward the total number of credits required for the graduate degree but will not be computed in the student’s cumulative graduate grade point average. If no thesis, internship or culminating project is required as a part of the degree requirements, a minimum of 36 graduate credits will be required for the degree. The number of credit hours on the graduate transcript must total at least 30 overall.

### Transfer Credit

A maximum of twelve semester hours of graduate credit from another institutionally accredited institution may be included in a degree-seeking student’s graduate record if all of the requirements are met. Transfer of credit is allowed in two ways: acceptance of **previously earned credit**; and/or **requesting to take a course at another institutionally accredited institution while enrolled as a CNU degree-seeking graduate student**.

### Previously Earned Credit

A degree-seeking graduate student may transfer a graduate course from another institutionally accredited institution and apply the credit toward a degree at Christopher Newport University provided that the intended transfer of credit meets all of the requirements as stated below:

#### Transfer of Credit Requirements

- An earned grade of *B-* or better.
- Pass/fail or satisfactory/unsatisfactory grades are ineligible for transfer credit.
- Courses submitted for transfer credit must have been applicable toward a similar degree at the institution awarding them.
- Submit an official transcript from an institutionally accredited institution showing the course and the grade earned.
- Evidence of the course applicability toward a graduate degree must be forwarded to the Graduate Program Director.
- Transfer credit must have been taken within six years prior to the award of the CNU master’s degree.
- The Graduate Program Director must approve the transfer of credit.
- The request for transfer of previously earned credit must be made during the student’s first semester as a degree-seeking student.
- No transfer credit will be allowed for courses that have been used to fulfill the requirements of another earned degree.
- Only formal course work hours, *but not thesis or research hours*, may be used as transfer credit.

### Transfer Credit Earned While Enrolled at CNU

A degree-seeking graduate student may take a graduate course at another institutionally accredited institution and apply the credit toward a degree at Christopher Newport University provided that the intended transfer of credit meets all of the ‘Transfer of Credit Requirements’ as stated in the above section and all the processes are followed and approved.

The student must complete a *Request to Take Graduate Course Elsewhere* form available for current students on the CNU Graduate Studies website by logging in, at: <https://my.cnu.edu/gradstudies/current/> under Forms and Documents and **complete all the steps in the approval process** in a timely manner **prior to registering for the course**, or the course will not be eligible for transfer. The class format and course length should be equivalent to what is offered at CNU. For additional information refer to ‘Request to Take Classes Elsewhere’ section on page 21 of this catalog.

Generally, permission to take a course elsewhere will not be given during the student’s last semester at CNU, or if the course is offered at CNU during that semester.

### Change of Graduate Program (Thesis/Non-thesis/Endorsement/Concentration)

To declare a change of program, for example thesis to non-thesis, or change in an endorsement area or concentration, students must complete the *Change of Graduate Program* form available from the Graduate Studies website. The form must be submitted upon the completion of 21 hours or prior to the last semester of degree completion. After receiving the appropriate signatures on the form, the student submits the form to the Office of the Registrar and a copy to Graduate Studies. Degree requirements of the program change are based on the catalog in effect at the time of your admission/readmission.

### Time to Graduation Limit

**Graduate students must complete all of their work toward a master's degree within a period of six calendar years. This applies to both degree-seeking and non-degree graduate students.** This period begins with the student's initial registration as a graduate student. Academic work, including transfer credit, taken more than six years prior to the award of the master's degree cannot be credited toward that degree. In extenuating circumstances a student may appeal for an exception to this academic policy. The appeal must be approved by the student's Graduate Program Director and the Dean of Graduate Studies. The graduate appeal for exception to an academic policy form is available on the graduate studies website. Additional conditions, imposed to verify the currency of knowledge involved in the courses for which the six-year limit might be waived, may be imposed.

### Plan of Study

Each student in consultation with their advisor should develop a Plan of Study showing a reasonable concentration of interrelated subjects. This plan should be formulated and approved by the student's advisor before the student has completed 15 hours of graduate study. The student's advisor must approve any change in the student's Plan of Study. In case of changes in program requirements subsequent to the year the student became degree-seeking, the degree's Program Director and the Dean of Graduate Studies must approve changes to the standard degree program.

### Full-time Status

Students who enroll in nine (9) or more graduate credits in a given semester or a total of at least six (6) credits for all summer sessions combined will be considered a full-time student. **Students in the Master of Financial Analysis (MFinA) program need approval by the Vice Provost for Research and Graduate Studies to take more than 15 credits in a given semester. All other students need approval of the Dean of Graduate Studies to take more than 13 credits in a given semester or more than 6 credits in a summer session.**

### FULL Time

Minimum of 9 hours	Fall or Spring Semester
Minimum of 6 hours	within the May Term/ Summer Sessions

### HALF Time

Minimum of 5 hours	Fall or Spring Semester
Minimum of 3 hours	within the May Term/ Summer Sessions

### Comprehensive Examination

A degree program for a master's degree may require a comprehensive examination to evaluate the student's proficiency in their field. This comprehensive examination may be written and/or oral. The nature of the comprehensive examination is determined by the department(s) involved in administering the degree. At the time of the comprehensive exam or at a specifically designated time, each student will be asked questions that specifically assess the student's mastery of course-related objectives. A student failing the comprehensive examination may request a re-examination within six months of the failure. Only one additional examination is permitted. For MAT degree candidates, the Praxis II is the comprehensive examination.

### Thesis

Research resulting in the presentation of a thesis may be required by the degree program. **Thesis students are required to enroll in at least one thesis credit hour during any semester in which they are working on the thesis and must enroll in at least one thesis credit hour during the semester of degree completion.** The defense of the thesis may be considered as part of the comprehensive examination. All theses presented must meet the requirements as listed in the *Policy and Style Manual for Thesis Proposals and Master's Theses*. The manual is available for current students on the Graduate Studies website by logging in, at: <https://my.cnu.edu/gradstudies/current/> under Forms and Documents. Theses may be placed in the CNU library as research sources available to the academic community.

For current students, the **Thesis Format Review** and **Final Copy Due Dates** can be accessed on the Graduate Studies website by logging in, at: <https://my.cnu.edu/gradstudies/current/> under Dates and Deadlines.

### Intent to Graduate Form Deadlines

The *Intent to Graduate* form is available for current students on the Graduate Studies website by logging in, at: <https://my.cnu.edu/gradstudies/current/> under Forms and Documents. If your anticipated date of graduation changes for any reason, you are required to submit a new *Intent to Graduate* form to the Office of the Registrar by the appropriate due date.

### Commencement Exercises

Commencement exercises are held once each year in May. Students who complete degree requirements in August and December are eligible to participate in the *following* Spring Commencement ceremony. Diplomas for August graduates will be available on the first business day after the end of the last summer term. Diplomas for December graduates will be available approximately 21 calendar days after the semester ends. For August and December graduates who do not pick up their diplomas as designated and who plan to participate in the Spring Commencement ceremony, diplomas will be available immediately following the ceremony.

All prospective graduates will be contacted before the Spring Commencement ceremony by the Office of the Registrar and/or the Dean of Students concerning rehearsal and attendance. **Those students planning to attend Commencement must notify the University by the announced deadline so that seating arrangements can be finalized for all who plan to participate.** Students who plan to attend Commencement must keep the Office of the Registrar informed of any address and/or phone number changes so that students can receive important information concerning graduation. **Degrees will not be conferred for students unless all graduation requirements, including courses, degree requirements, GPAs, credits, and financial obligations have been satisfied.**

### Assessment Requirements

The University engages in a number of assessment processes in order to gauge the effectiveness of its educational programs and administrative operations. These processes may require students to participate in examinations, surveys, interviews, or other information gathering activities that are not part of any specific course. Each student will be given at least a 10-day notification for any assessment and evaluation activity that requires scheduling prior to participation. The satisfactory completion of assessment and evaluation is a general requirement for graduation from the University.

## GRADUATION REQUIREMENTS

### All master degree programs require:

- Successful completion of minimum hours of the master's degree program coursework in good standing;
- Submission of the *Intent to Graduate* form by the published due dates;
- Successful completion of the comprehensive examination, if applicable;
- Thesis students are required to enroll in at least one thesis credit hour during any semester in which they are working on the thesis and must enroll in at least one thesis credit hour during the semester of degree completion;

- Successful defense of a culminating project or thesis (if applicable) and presentation of the appropriate number of approved copies to Graduate Studies by the published deadline can be found for current students on the Graduate Studies website by logging in, at: <https://my.cnu.edu/gradstudies/current/>.

## OFFICE OF STUDENT ACCOUNTS, CASH SERVICES

Christopher Newport Hall, first floor  
594-7195 Student Accounts  
594-7042 Cash Services

### STUDENT ACCOUNTS AND CASH SERVICES

OFFICE HOURS:  
MONDAY - FRIDAY:  
8:00 A.M. - 5:00 P.M.

- A **parking fee** is charged per academic year.
- A **returned check fee** is charged for each returned check.
- A **study abroad fee** is required on specified courses
- An **online course fee** is assessed on all online courses.

### TUITION, FEES AND FINANCIAL INFORMATION

*Current* graduate tuition and fees can be found on the CNU Business Office website at: [cnu.edu/tuition](http://cnu.edu/tuition).

Graduate tuition and fees are determined annually and approved by the Board of Visitors for the following academic year. Current rates and information can be found on the CNU Business Office website at [cnu.edu/tuition](http://cnu.edu/tuition).

Interpretation of matters concerning fees is the responsibility of the Vice President for Finance and Planning/CFO. The President of Christopher Newport University has final authority in the interpretation.

#### TUITION

Graduate students register for classes on a per credit hour basis. Full time status for graduate students is described on page 24 of this catalog.

The tuition and fees for auditing a course are the same as the tuition and fees for taking a course for credit.

#### ROOM AND BOARD

Graduate students are able to purchase a meal plan, but Christopher Newport University does not provide housing for graduate students. Current rates can be found on the Housing website at [cnu.edu/life/housing/roomandboard](http://cnu.edu/life/housing/roomandboard).

#### GENERAL FEES

- Current fees can be found on the CNU Business Office website at: [cnu.edu/tuition](http://cnu.edu/tuition).
- Students who wish to be admitted to the University must pay an **application fee**. This fee is non-refundable and may not be applied to other fees. If the fee is paid with the initial application for admission but the student does not enroll in the term for which they originally applied, it may be carried forward only to the next term. The fee does not apply to continuing education courses.
- A non-refundable **applied music instruction** fee is charged per one credit hour course.
- A **laboratory fee** is assessed on specific courses.
- A **late fee penalty** is charged for additional charges and balances billed and not paid by the applicable payment deadline.

### SCHEDULE CHANGES (ADD/DROP)

Schedule changes that result in additional charges are due by the payment due date. If this date has passed, then payment is due in full on the date the course is added.

Students who are using the semester payment plan and who add/drop a course or courses may increase or reduce their payment schedules. Students should contact Student Accounts directly to take this action.

**For students who plan to or are receiving financial aid, course-load reductions and additions can affect the amount of financial aid awarded to them.** Students will be responsible for any charges remaining after a course-load change, and any amount due as a refund under the University's policy may be refunded directly to the financial aid grantor, rather than to the student, if the rules of the grantor so require. If a student receives a financial aid award and must decrease their academic workload, they should contact the Office of Financial Aid, telephone (757) 594-7170.

### PAYING YOUR BILLS AT THE UNIVERSITY

You can view your student account bill and make eCheck (electronic check transfer) or credit card payments to pay your tuition and fees, and room and board charges online, through your CNULive account. There is a convenience fee for all credit/debit card payments and a \$0.50 fee for an eCheck payment. **No Paper bills will be mailed.**

Please visit our website at [cnu.edu/tuition](http://cnu.edu/tuition) for more details and instructions.

#### Billing

Christopher Newport University bills tuition, fees, and board charges by term. Fall bills are posted online in July and payment is due by the due date on the bill. Spring bills are posted in November and are due in December. It is the student's responsibility to contact the Office of Student Accounts if they are having a problem accessing their bill. Failure to receive a bill does not waive the student from any financial responsibilities or penalties.

For registrations, schedule adjustments, and meal plan assignments taking place after early registration and the initial billing, payment is due by the payment due date. If this date has passed, payment is due in full on the date of the change. It is the student's responsibility to pay all charges by the payment due date each term.

Please visit our website: [cnu.edu/tuition](http://cnu.edu/tuition) for additional information and due dates.

### Payments

You may view and pay your bill online through your CNU Live account.

Payment may also be made at the Cashier's Office with cash, money order, or check, payable to Christopher Newport University. The Cashier's Office is located on the first floor of Christopher Newport Hall.

Money order or check, payable to Christopher Newport University can be mailed to Christopher Newport University, Attn: Cashier's Office, 1 Avenue of the Arts, Newport News, VA 23606-3072.

Students may also pay their tuition bills to the University through a monthly payment program, discussed later in this publication.

### Please take careful note of the following:

Students who owe the University any charges accrued from previous terms (i.e., tuition, room-and-board, parking fines, library fines, etc.) are required to pay these charges before being permitted to register or receive transcripts.

Students who are receiving any form of tuition assistance must provide the Office of Student Accounts with properly approved tuition assistance forms and pay any balance by the payment due date or a late payment fee will be assessed.

Students who are receiving any form of financial aid must have accepted the aid, prior to the payment due date. Deferments will be for only the amount of the award, excluding work-study, and students are required to pay any balance by the payment due date. (Deferments do not apply to private alternative loan programs.) If a financial aid recipient chooses to withdraw from classes, they must complete the appropriate forms with the University Registrar. See **Tuition Refund Policy** below for withdrawal deadlines. Students may also be liable to repay any financial aid disbursed if the semester is not successfully completed. Late financial aid applicants must be prepared to meet the tuition obligation through means other than financial aid by the payment due date.

The University may, at its sole discretion, cancel a student's registration for failure to meet financial obligations at any time. Questions concerning financial policy and payment of tuition and fees should be directed to the Office of Student Accounts, located on the first floor of Christopher Newport Hall, telephone (757) 594-7195.

### Payment Policy

Tuition and fees are considered fully earned and are due at the time of registration or no later than the payment due date established for each term. Tuition payment may be mailed if received in the University Business Office **by the payment due date**. Postmark date does not apply. You may also pay online with an eCheck (\$0.50 fee) or credit card: VISA, American Express, Discover and Mastercard (a convenience fee applies with credit card use).

In the fall and spring terms, at 5:00 p.m. on the **payment due date, or any date thereafter, the University may cancel the registration for all students who have not made financial arrangements**. These students may register again during scheduled registration periods. The University does not guarantee that students will be able to obtain their original schedules. Classes are available on a first-come, first-served basis. If a student's financial account is not paid by the due date, the University may charge a late payment penalty and administrative fee.

### Monthly Payment Plan

Students may select to use the monthly payment plan and must sign up separately for each semester. This payment option allows payment of tuition and fees in monthly installments. When determining the amount to budget, please consider tuition and fees, applied music fees, lab fees, and room and board (if applicable). This plan may be used by full-time or part-time students.

Information concerning this plan may be obtained on our website at [cnu.edu/businessoffice/payment](http://cnu.edu/businessoffice/payment), or by calling (757) 594-7582. Students are encouraged to apply for the plan as soon as possible, since late application for the plan requires a larger down payment. Students who have applied for and receive financial aid may participate in the monthly tuition payment plan. The University may assess a late payment fee for each payment that is made late. This fee is payable directly to the University.

### Tuition Refund Policy

If the University cancels a course for which a student has registered, the student is entitled to a full refund for that cancelled course. Please note that refunds will not be issued for any fee which is listed in the University Catalog as a non-refundable fee, unless the course is cancelled by the University. Tuition and comprehensive fees will be refunded for Fall and Spring terms in accordance with the following policy:

- 100 percent for all courses dropped through the end of the first week of the academic term or for any course which is cancelled by the University.
- 75 percent for all courses withdrawn from during the second week of the academic term.
- 50 percent for all courses withdrawn from during the third and fourth week of the academic term, after which time there shall be no refund.

Federal financial aid recipients who totally withdraw from the University will have their refund processed in accordance with federal regulations. These laws provide for a prorated refund if a student totally withdraws before the academic term is complete. These funds may be refunded to the financial aid grantor, if the rules of the grantor so require. The applied music fees are not refundable after the first day of scheduled lessons with the instructor.

For students receiving financial aid or tuition assistance, funds received from these programs are applied to the student's account, as received, until the entire financial obligation to the University is satisfied. Refunds are made to the student from the last funds received, if the student's account is overpaid.

For Department of Defense tuition and fees refund policy, please contact student accounts at 757-594-7195 for information.

Students must drop or withdraw from courses on or before the deadlines listed above in order to be eligible for a refund. Students who are participating in the semester tuition payment budgeting plan and whose payments received by the University exceed the amount owed in accordance with the policy listed above will receive a direct refund from the University.

All refunds will be processed in accordance with the above policy. Qualifying Veteran's Affairs students should visit [cnu.edu/tuition/refund](http://cnu.edu/tuition/refund) for their specific refund deadlines. If there are extenuating circumstances for any student such as mandatory job transfer or active duty military deployment, mobilization, or change in duty assignment from the Hampton Roads area documented by a letter from the employer and/or a copy of military orders; or an extended period of inpatient hospitalization documented by a physician's statement or a military service connected medical condition documented by a physician's statement. A tuition refund appeal form can be found on our website at [cnu.edu/businessoffice/\\_pdf/cnu-form-tuition\\_refund\\_appeal.pdf](http://cnu.edu/businessoffice/_pdf/cnu-form-tuition_refund_appeal.pdf). Notification of the final decision will be made within two weeks of the date the appeal is filed.

Please be aware that students are held individually responsible for the information contained in the Christopher Newport University Catalog. Failure to read and comply with University regulations will not exempt students from financial penalties. **Any appeal filed after the term may be denied regardless of the circumstances.**

### Returned Checks

A returned check fee will be assessed for all checks returned from the bank to the University for any reason. An individual has seven (7) calendar days to repay the amount of the check and the returned check fee. If a check for tuition and fees is returned to the University from the bank for any reason a late payment fee will be assessed

in addition to the returned check fee. If the student does not repay the total amount due within seven (7) calendar days, their registration will be cancelled. If the University receives two non-sufficient fund checks or eChecks from a student, the University will no longer accept checks or eChecks from the student or on the student's behalf.

### Cashing of Student Checks

The Business Office will cash checks up to \$25.00. Checks should be made payable to Cash. Under regulations governing state-supported agencies, the University is not permitted to cash checks made payable to Christopher Newport University. A returned check fee is charged for each check returned for insufficient funds. If an individual has a check returned a second time, the University will revoke all check-cashing privileges. The University will not cash a check for an individual who owes a debt to the University.

### Delinquent Financial Obligations

Students who have outstanding financial obligations to the University (to include tuition and fees, room and board, parking fees and fines, library fees and fines, checks returned for non-sufficient funds, etc.) will be refused all services to the University until these financial obligations have been paid in full. Students may not be permitted to register for subsequent terms, and the University may not issue official transcripts. This also will apply to students who retain property that belongs to the University.

If a student's financial account becomes delinquent, the University charges a late payment penalty and administrative fee. The University may turn the account over to a third-party collection agency or credit bureau, the Department of Taxation, and the Attorney General's Office. The University is permitted under Virginia Law to attach Virginia State income tax refunds or lottery winnings in repayment of any debt which is owed to the University. In the event an account becomes delinquent, the student is responsible for all administrative costs, collection fees, based on the percentage stated in the collection agency contract in effect, and attorney's fees incurred in the collection of funds owed to the University.

### Incidental Expenses

It is impossible to estimate the exact costs of clothing, travel, and other incidental expenses which the student incurs, for these are governed largely by the habits of the individual. The cost of books depends on the courses taken. Money for textbooks cannot be included in checks covering tuition and fees.

### Senior Citizens

The 1989 session of the Virginia General Assembly amended and reenacted the Senior Citizen's Higher Education Act of 1974. Senior citizens are permitted to register and enroll in courses as full-time or part-time students for academic credit, without charge, providing taxable

income for federal income tax purposes did not exceed \$23,850 (effective July 1, 2015) for the year preceding the enrollment year. Senior citizens may also, without charge, enroll in academic credit courses for audit purposes and in non-credit courses offered by the University without regard to income. They will, however, be required to pay applied music fees and laboratory fees for any course for which such a fee is applicable. Interested senior citizens must contact the Office of Transfer Admission and Enrollment to pursue admission. The University's ability to offer a selected course is at the discretion of the University.

The law passed by the General Assembly in the 1988 session requires the State Council of Higher Education to establish procedures to ensure that tuition-paying students are accommodated in courses before senior citizens participating in this program are enrolled. In the case of eligible senior citizens who have completed 75 percent of the requirements towards a degree, the University is authorized to make individual exceptions to such procedures as may be established by the Council of Higher Education.

Under this program, the categorization of senior citizen applies to those whose 60th birthday falls before the registration term and who have been a legal domiciliary of Virginia for one year. No limit is placed on the number of terms a senior citizen who is not enrolled for academic credit may register for courses, but the individual can take no more than three non-credit courses in any one term. The law places no restriction on the number of courses that may be taken for credit in any term or on the number of terms in which an eligible senior citizen may take courses for credit. The continuing education program welcomes the participation of senior citizens with the understanding that their registration is contingent on a minimum number of paying students to allow the course's formation.

Forms to request the senior citizen tuition waiver are available in the Office of Student Accounts, located on the first floor of Christopher Newport Hall, and must be completed for each academic term.

### **Classification as an In-State Student**

All students claiming entitlement to in-state educational privileges, including in-state tuition rates, must demonstrate eligibility in accordance with the provisions of Section 23-7.4 of the Code of Virginia. **Applicants for admission who believe they qualify for in-state educational privileges must complete the Application for Virginia In-State Tuition Rates.** Graduate students should direct questions to Graduate Studies.

Continuing graduate students who believe that changes subsequent to their initial enrollment justify a reclassification of domiciliary status may complete the Application for Reclassification for Virginia In-State Rates form and return it to the Office of Transfer Admission and Enrollment.

### **Procedure**

Upon receipt in Graduate Studies, the Application for Virginia In-State Tuition Rates form will be reviewed by a staff member for an initial determination. If the staff member disagrees with the student's own determination for in-state privileges, the student will be contacted immediately and given an explanation of the determination.

### **Appeals**

Students who disagree with the original residency decision may request an immediate appeal in writing; but it must be done within 10 working days of being notified of the initial determination. A panel of three University officials will then review the appeal. Students are welcome to forward any supporting documentation (e.g., income tax returns). The panel will respond to appeals within five working days. Students who still disagree may request a final appeal. This appeal must be made in writing within ten working days of the first appeal decision. Another panel of University officials will then convene to consider the appeal. A written notification of the panel's decision will be sent to the student by U.S. Registered Mail within five days of the hearing. Should the student disagree with the final determination, they then have 30 days to take this matter to Circuit Court.

## **Short-Term Emergency Loans**

### **The John Stephen Rasmussen Memorial Fund**

This fund was established by the community in 1972, in memory of John Stephen Rasmussen, a 21-year-old student who lost his life in a fire while in the act of saving others. He was posthumously awarded a Carnegie Medal. Students may borrow, twice each Term, interest free, sums (funds permitting) for a period not to exceed 45 days. Applicants should be in good standing and present a valid Christopher Newport University student ID card when they apply to the Office of Student Accounts.

### **Emergency Loan Fund**

An emergency loan fund was established in 1967 by the sophomore class, in honor of former CNU President James C. Windsor. Students may borrow interest free, sums for a period not to exceed 45 days. Students may receive no more than two emergency loans per academic term and each loan is limited to \$200, funds permitting. For emergency loan purposes, all summer terms equal one academic term. Applicants should be in good standing and present a valid Christopher Newport University student ID when they apply to the Office of Student Accounts.

**VETERANS BENEFITS**

Students who are using Veterans Administration (VA) education benefits for the first time should anticipate a delay of approximately eight weeks before the first education allowance check is mailed. Students who plan to use the VA Benefits should contact the University's Office of the Registrar, located on the first floor of Christopher Newport Hall, telephone (757) 594-7155. Covered individuals are permitted to attend or participate in the course of education during the period beginning on the date on which the individual provides to the educational institution a certificate of eligibility for entitlement to educational assistance under chapter 31, 33, 35 (a "certificate of eligibility" can also include a website – eBenefits, or VAF 28-1905 form for chapter 31 authorization purposes) and ending on the earlier of the following dates:

1. The date on which payment from VA is made to the institution.
2. 90 days after the institution certified tuition and fees following the receipt of the certificate of eligibility.

The University will not impose any penalty, including the assessment of late fees, the denial of access to classes, libraries or other institutional facilities, or the require a covered individual borrow additional funds, on any covered individual because of the individual's inability to meet their financial obligations to the institution due to the delayed disbursement funding from VA under chapter 31, 33, or 35

In accordance with U.S. Code, 38 United States Code (U.S.C.) 3679(c). Veterans Access, Choice and Accountability Act of 2014, the following individuals shall be charged a rate of tuition not to exceed the in-state rate for tuition and fees purposes:

- A Veteran using educational assistance under either Chapter 30 (Montgomery G.I. Bill®-Active Duty Program) or Chapter 33 (Post 9/11 G.I.Bill), of Title 38, United States Code, who lives in the Commonwealth of Virginia while attending a school located in the Commonwealth of Virginia (regardless of their formal state of residence).

- Anyone using transferred Post-9/11 GI Bill benefits who lives in the state where the IHL is located, and the transferor is a member of the uniformed service serving on active duty.

- A spouse or child using benefits under the Marine Gunnery Sergeant John David Fry Scholarship (38 U.S.C. § 3311(b)(9) who lives in the Commonwealth of Virginia while attending a school located in the Commonwealth of Virginia (regardless of their formal state of residence).

- A spouse or child using benefits under Survivors' and Dependents' Education Assistance (Chapter 35) living in the Commonwealth of Virginia while attending a school located in the Commonwealth of Virginia (regardless of their formal state of residence).

- An individual using educational assistance under chapter 31, Veteran Readiness and Employment (VR&E) who lives in the Commonwealth of Virginia while attending a school located in the Commonwealth of Virginia (regardless of their formal state of residence) effective for courses, semesters, or terms beginning after March 1, 2019.

- Anyone described above remains continuously enrolled (other than during regularly scheduled breaks between courses, semesters, or terms) at the same institution. Therefore, the described person must be enrolled in the institution and use educational benefits under Chapters 30, 31, 33, or 35 of Title 38, United States Code.

GI Bill® is a registered trademark of the U.S. Department of Veterans Affairs (VA). More information about education benefits offered by the VA is available at the official U.S. government Website at <https://www.benefits.va.gov/gibill>.

## OFFICE OF FINANCIAL AID

Keely Haynes, Director

Christopher Newport Hall First Floor

(757) 594-7170

finaid@cnu.edu

Christopher Newport University offers financial assistance to qualified graduate students to help pay for all or part of their college expenses. The University participates in a variety of federal, state and University programs, most of which are administered through the Office of Financial Aid. Types of available aid include scholarships, grants and loans. Although most forms of financial aid are based on financial need, some use criteria other than financial need for eligibility. All students are encouraged to complete the Free Application for Federal Student Aid (FAFSA) annually as soon as possible after October 1.

### STUDENT ELIGIBILITY

#### To be eligible for financial aid, graduate students must:

- Be admitted as a degree-seeking student in an eligible graduate program;
- Be enrolled at least half-time;
- Be in good academic standing;
- Be making satisfactory academic progress;
- Be a U.S. citizen or eligible non-citizen;
- Not owe a refund of a federal grant;
- Not be in default on a federal student loan.

Half-time students must be enrolled in at least five credits in the fall semester or in the spring semester, and a total of at least three credits for all summer sessions combined to receive aid. Annual loan limits are established by the federal government. The total aid received cannot exceed the cost of attendance (tuition, fees, room, board and miscellaneous expenses as defined by the Office of Financial Aid).

### FEDERAL DIRECT STUDENT LOAN

Graduate students may borrow up to \$20,500 per academic year, not to exceed the cost of attendance. Loans made under the Federal Unsubsidized Direct Student Loan program are at a fixed interest rate and are long-term, deferrable loans. With an Unsubsidized Direct Loan, the interest that accrues while the loan is in deferment is the responsibility of the student. These loans are deferred until six months after the student graduates or stops attending half-time. Loan proceeds are sent directly to Christopher Newport and are applied to charges before any refunds are made to the student.

### TEACH GRANT

The TEACH Grant Program provides grants of up to \$4,000 a year to students who are completing course work needed to begin a career in teaching. At Christopher Newport, students must be enrolled in the Master of Arts in Teaching Program to qualify. Undergraduate-level programs do not qualify.

As a condition for receiving a TEACH Grant, student must sign a TEACH Grant Agreement to Serve in which you agree to (among other requirements) teach:

- In a high-need field
- At an elementary school, secondary school or educational service agency that serves students from low-income families
- For at least four complete academic years within eight years after completing (or ceasing enrollment in) the course of study for which you received the grant

**IMPORTANT:** If you do not complete your service obligation, all TEACH Grant funds you received will be converted to a Direct Unsubsidized Loan. You must then repay this loan to the U.S. Department of Education, with interest charged from the date the TEACH Grant was disbursed (paid to you or on your behalf).

To receive a TEACH Grant at Christopher Newport, you must do the following:

- Complete the Free Application for Federal Student Aid (FAFSA)
- Be enrolled as a graduate student in the MAT Program
- Meet and maintain a cumulative GPA of at least 3.25
- Receive TEACH Grant counseling that explains the terms and conditions of the TEACH Grant service obligation (you must complete counseling each year that you receive a TEACH Grant)
- Sign a TEACH Grant Agreement to Serve
- The TEACH Grant Counseling and the Agreement to Serve must be completed online.

If you are considering applying for the TEACH Grant, we strongly urge that you educate yourself on this opportunity before submitting an Agreement to Serve. Read the fine print and make sure you fully understand the strict requirements before committing. It has been reported that about one-third of all TEACH grants disbursed since the program's inception in 2008 have been converted into capitalized loans.

### VA TEACHING SCHOLARSHIP LOAN PROGRAM

The Virginia Teaching Scholarship Loan Program, furnished by the Virginia Department of Education, is crafted to increase the number of elementary and secondary school teachers who have an interest in pursuing studies in one of the critical teacher shortage areas. The list of those areas is updated each year. The list usually includes math, science, foreign language and special education. Teacher education schools must participate.

## SCHOLARSHIPS

Graduate students are encouraged to seek outside scholarships as an additional source of funding to pay for college. Students are encouraged to visit [studentaid.ed.gov](http://studentaid.ed.gov) to complete a scholarship search.

Students are encouraged to view scholarship information and available resources on the scholarship link of the financial aid webpage at [cnu.edu/scholarships](http://cnu.edu/scholarships).

## STATE WAIVERS

**Virginia Military Survivors and Dependent Education Program (VMSDEP)** provides eligible students, as confirmed by the Virginia Department of Veterans Services (DVS), with waiver of all tuition and mandatory fees at a Virginia public college or university. In addition, as funds are available, eligible students may receive a stipend to offset other educational expenses, such as room and board.

To be eligible, children and spouses of qualifying veteran service members must meet the following requirements:

1. The dependent child must be between the ages 16 and 29 inclusively; there is no age restriction for spouses
2. The qualifying military service member must be a current Virginia citizen or maintained a physical presence in the Commonwealth of Virginia presently and for five consecutive years prior to the date of application submission or must have entered military service as a citizen of Virginia
3. In the case of a deceased qualifying military service member, the surviving spouse can meet the residency requirements by:
  - a. having been a Virginia citizen or maintained a physical presence in the Commonwealth of Virginia for five consecutive years prior to marrying the military service member, or
  - b. presently being a Virginia citizen or maintained a physical presence in the Commonwealth of Virginia for five consecutive years prior to the date of application submission.

## Satisfactory Academic Progress

Per federal regulations, students receiving financial aid must be making progress toward a degree. Graduate students are expected to maintain a minimum cumulative grade point average of 3.0 and successfully complete at least 67 percent of all credits attempted. Please review Christopher Newport's Satisfactory Academic Progress policy online at [cnu.edu/financialaid/conditions/sappolicy](http://cnu.edu/financialaid/conditions/sappolicy).

## Budget Planning

Budget planning for attending Christopher Newport should consider both direct and indirect costs. Direct charges are tuition and fees. Indirect costs include but are not limited to room, board, books, transportation and miscellaneous expenses. Students should be prepared to pay out-of-pocket for books and initial living expenses, as student loans are not disbursed until the close of the add/drop period, each semester.

## Additional Information

Students interested in receiving financial aid should view the Christopher Newport University website at [cnu.edu/financialaid](http://cnu.edu/financialaid). The Free Application for Federal Student Aid (FAFSA) should be submitted online at [fafsa.gov](http://fafsa.gov) by the March 1 priority filing deadline. Individual guidance is available on a walk-in basis at the Office of Financial Aid or you may call the office or email your questions.

## GRADUATE ASSISTANTSHIPS

### **Application Procedures**

Contact the Graduate Program Director for the specific graduate program you wish to assist and obtain a *Graduate Assistantship Application*. Complete and submit the application with the additional documents/information requested directly to the Graduate Program Director for review and a decision.

### **Criteria**

The degree-seeking graduate student must be enrolled as a full-time student while serving as a graduate assistant. Each program has different criteria for graduate assistantships. The application is competitive.

### **Assistantship Responsibilities**

Assistantships are awarded for one academic year. A student may receive an assistantship for a maximum of a combination of four semesters. Assistantships may include a tuition and fee waiver. Types of assistantship activities are research and/or related activities, administration (e.g., of tutorial programs), or teaching and/or related activities. Employment outside of the assistantship requires the approval of the Dean of Graduate Studies. Students accepting a graduate assistantship must indicate their compliance with university privacy regulations by signing the *Confidentiality/Privacy Statement of Agreement*.

## BACHELOR'S TO MASTER'S FIVE-YEAR DEGREE PROGRAMS

Christopher Newport University offers master's degree programs that CNU students can complete with one additional year beyond the senior year. At the end of four years of study a student earns a bachelor's degree, and the student enrolls the next semester/term in graduate courses leading to a master's degree. Please note that the use of the term 'five-year' is not meant to ensure the completion of the master's in precisely five years. While in most cases this should be possible, the number of graduate hours completed while an undergraduate, the number of hours required for the master's, and the vagaries of thesis research may require a specific student to take longer than five years.

Students may elect to participate in a Bachelor's to Master's Five-year Program to earn their master's degree in one of the following areas\*:

- Applied Physics and Computer Science (MS - APCS)**
- Environmental Science (MS - ENVS)**
- Teaching (MAT)**

### Admission Requirements

- Current Grade Point Average (GPA) of 3.00 or higher, with an exception for ENVS applicants, for whom a GPA of 3.00 or higher is recommended but not required.
- **Entrance examination scores: See each degree program for specific requirements**
- Two completed recommendation forms, submitted electronically (one must be from a CNU faculty member in the major).  
There is a specific recommendation form for **MS applicants** and a specific recommendation form for **MAT applicants**.

### Application Process

- The student completes and electronically submits the *Application for Admission to the Bachelor's to Master's Five-Year Graduate Study Program* at: [cnu.edu/admission/graduate/fiveyear](http://cnu.edu/admission/graduate/fiveyear). *Select Apply Now*
- The student submits all items required for admission to the program of their choice.
- **The application deadline for the Bachelor's to Master's Five-year Graduate Study Program is February 1 of the junior year.** Sixty-five (65) undergraduate credits must have been earned prior to submitting the application. Transfer students may apply at this time, but a decision will not be made until applicants have earned at least 12 hours of credit at Christopher Newport University with a GPA of 3.0 or higher, with an exception for ENVS applicants, for whom a GPA of 3.00 or higher is recommended but not required. **The application and all supporting documents must be received by Graduate Admission by February 1.**
- No application fee is required.

After the complete admission package has been received by Graduate Admission at [gradadmit@cnu.edu](mailto:gradadmit@cnu.edu), it will be sent to the appropriate Graduate Program Director for review. To check the status of the application email [gradadmit@cnu.edu](mailto:gradadmit@cnu.edu).

Once accepted into the Bachelor's to Master's program, students begin taking graduate classes in their senior year at CNU.

*\* The Master of Financial Analysis (MFinA) program is not a five-year program. However, students in Business, Economics, Computer Science and other degree programs can apply to the MFinA program in their junior year; and, if admitted, take up to two MFinA classes in their senior year and apply the credits toward the MFinA graduation requirements. Matriculation into the MFinA program is contingent on meeting MFinA program admission requirements upon completion of the undergraduate degree. The MFinA program is described on page 98 as part of the Master's Degree Program section.*

### Academic Performance as an Undergraduate Student Accepted to take graduate classes without additional permission.

- a) To continue in the five-year program, a student must maintain a 3.0 GPA, and remain in good standing by earning a grade of B- or better in any graduate course taken while in the undergraduate status.
- b) Upon completion of the normal requirements in their respective undergraduate program, a bachelor's degree will be awarded to the student.

### Graduate Grading System

If an undergraduate student enrolls in a graduate course, the following graduate grading system will apply:

Letter Grade	Meaning	Numerical Value
A	Excellent	4.00
A-		3.70
B+		3.30
B	Good	3.00
B-		2.70
C+		2.30
C	Passing (Poor)	2.00
C-		1.70
F		0.00
I	Incomplete	
W	Withdrew	
Z	Grade for 0 credit lab	

**Graduate courses may not be taken on a pass/fail basis.**

### Graduate Courses taken while a Senior, may be transferred to a CNU Graduate Transcript

The student is responsible for earning 120 credits to complete the undergraduate degree. Up to 12 graduate credits earned while in undergraduate status may be transferred to the graduate transcript if those hours were earned above the 120 credits required for the bachelor's degree. Only the graduate courses and the credits are posted to the graduate transcript. No grades are posted for the transferred courses.

### Credits

To receive the master's degree, all graduate students, **must present on the graduate transcript successful completion of a minimum of 30 hours of graduate credits.** However, individual programs may require additional hours.

The **Bachelor's to Master's Five-year Program Requirements, Graduate Course Hours and Course of Study** for each program are listed on the following pages. The MFinA program requirements are listed on page 98 as part of the Master's Degree Program section.

## MASTER OF ARTS IN TEACHING FIVE-YEAR PROGRAM

This five-year program leads to both a baccalaureate degree and a Master of Arts in Teaching (MAT) degree. At the end of four years of study a student earns a bachelor’s degree. Based on the endorsement area chosen, the student enrolls in courses to teach at the elementary or secondary level. In the fall and spring semesters of the fifth year, the student is involved in a 14 week full-time teaching internship in the public schools, and receives supervision from knowledgeable teaching professionals. Upon completion of the program, a student earns a Master of Arts in Teaching degree and is recommended for a license to teach in the Commonwealth of Virginia. This master’s degree program is designed for those students who seek to become successful first-year teachers.

**MAT five-year students select an endorsement area from one of the following:**

<u>Endorsement</u>	<u>Grades</u>
<b>Art (Visual Arts)</b>	PK - 12
<b>Biology</b>	6 - 12
<b>Chemistry</b>	6 - 12
<b>Elementary</b>	PK - 6
<b>English</b>	6 - 12
<b>English as a Second Language</b>	PK - 12
<b>History and Social Science</b>	6 - 12
<b>Mathematics</b>	6 - 12
<b>Music-Choral or Instrumental</b>	PK - 12
<b>Physics</b>	6 - 12
<b>Spanish</b>	PK - 12

### Admission Requirements

Criteria for student admission into a five-year program:

- Undergraduate cumulative GPA of 3.0 or higher, with at least 65 earned credit hours.
- CAEP examination requirements:

Students must demonstrate achievement in reading, math, and writing by presenting scores close to the benchmark scores on the table below. The MAT Program understands that test performance alone does not indicate success in the teaching profession or in its graduate program. Therefore, the admissions committee looks at the applicant's entire application package holistically. Additionally, the table below offers students a choice in the scores they present. For example, a student could present SAT scores to meet the reading and math achievement and the Praxis Core "Writing" test to meet the writing achievement.

<b>Reading Achievement — Select one of the following</b>	<b>Mathematical Achievement — Select one of the following</b>	<b>Writing Achievement — Select one of the following</b>
Praxis Core "Reading" (test 5712 or 5713) — score of 168	Praxis Core "Math" (test 5733) —score of 175 OR Praxis Core "Math" (test 5732) — score of 163	Praxis Core "Writing" (test 5722 or 5723) — score of 165
SAT (2016 or later) "Evidence-Based Reading and Writing" — score of 550	SAT (2016 or later) "Math" — score of 540	SAT (2016 or later) "Essay — Writing Dimension" — score of 6.0 (This test was discontinued as of August 2023, but students may submit their scores if they took the test previously.)
ACT "Reading" — score of 22	ACT "Math" — score of 22	ACT "Writing" — score of 7.0
VCLA “Reading” Subtest— score of 235		VCLA “Writing Subtest— score of 235

3. A successful background check by Newport News Public Schools.
4. Two completed recommendation forms. One must be from a faculty member in the major who has taught the student in a major course.
5. Two essays, demonstrating competence in written communication and dispositions for teaching. The responses must be submitted electronically. The suggested length for each essay is 250 words. The essays are a critical component of the application. An inadequate essay will require completion of the grammar remediation module.
6. Completion of prerequisite licensure courses or a written plan for completion of all prerequisites during the graduate year.
7. Resume showing experience in working with children/youth and/or in schools.
8. MAT-Choral and Instrumental Music five-year applicants must be accepted for continuance in the Bachelor of Music in music education program.

**Students apply for admission to a five-year program by February 1 of the junior year. Transfer students may also apply at this time, but a decision will not be made until applicants have demonstrated at least 12 hours of earned credit at CNU with a GPA of 3.0 or higher.**

#### **Bachelor's to Master's Five-Year Undergraduate Program Requirements**

- a) To continue in the five-year program, a student must maintain a 3.0 GPA, and remain in good standing by earning a grade of *B-* or better in any graduate course taken while in the undergraduate status.
- b) Upon completion of the normal requirements in the undergraduate program, a baccalaureate degree will be awarded to the student.

#### **Graduate Course Hours**

Graduate credit hours taken as a five-year MAT undergraduate are subject to the following requirements:

- a) A maximum of nine hours of credit will be allowed while classified as an undergraduate.
- b) All courses must be approved by the student's advisor.
- c) The student will be held to the same standards in these classes as any other graduate student.
- d) To continue to take graduate courses as an undergraduate, a student must complete each graduate course with a grade of *B-* or better.
- e) Six graduate credit hours will count toward the 120 hours required for an undergraduate degree and will not directly count toward the MAT degree.
- f) Should the five-year student take nine graduate credit hours during the senior year, one three-credit graduate course will be transferred to the graduate transcript once the baccalaureate degree is earned. Only the course and credits are posted to the graduate transcript. No grade is posted for the transferred course
- g) **The number of credit hours on the graduate transcript must total at least 30 overall.**

#### **Course of Study**

- a) The five-year student who takes six graduate credit hours while in undergraduate status will enroll in eight graduate credits during the summer terms, 13 graduate credits fall semester, and nine graduate credits spring semester (see Example A below).
- b) The five-year student who takes nine graduate credit hours (by permission) while in undergraduate status will have three graduate credit hours moved to the graduate transcript. The student will enroll in graduate credits during fall and spring semesters of the senior year (see Example B below).
- c) A student accepted into the five-year program is required to follow the course of study as shown below in order to complete the curriculum within five years.

#### **EXAMPLES OF A BACHELOR'S TO MASTER'S FIVE-YEAR PROGRAM COURSE OF STUDY**

##### **Example A: Five-year student takes 6 graduate credit hours while in undergraduate status**

###### Undergraduate Status

Graduate Courses taken in senior year	6	credits
Undergraduate Courses	<u>114</u>	<u>credits</u>
Total	120	credits

###### Graduate Status

Summer	8	credits
Fall	13	credits
Spring	<u>9</u>	<u>credits</u>
Total for MAT	30	credits

**Example B: Five-year student takes 9 graduate credit hours while in undergraduate status**

## Undergraduate Status

Graduate credits taken in senior year with permission	9	credits
Undergraduate Courses	<u>114</u>	credits
Total	123	credits

(3 credits to be moved to Graduate Transcript)

## Graduate Status

Credits moved from Undergraduate Transcript	3	credits
Summer	8	credits
Fall	10	credits
Spring	<u>9</u>	credits
Total for MAT	30	credits

Further information about this program may be found at MAT website:

<http://cnu.edu/academics/departments/teacherprep/>

**Goals of the Program**

Students who complete the Teacher Preparation Program at Christopher Newport University will demonstrate competence in these areas:

1. Planning and preparing for instruction based on knowledge of content, resources and students;
2. Creating a safe, orderly and nurturing environment that creates high expectations for all while recognizing and respecting diversity;
3. Delivering and assessing instruction to meet state-mandated and district objectives, adjusting methods as needed to engage and teach every child;
4. Professional responsibilities of dress, collegial behaviors, engagement with families, administrative duties, and self-directed growth.

**Requirements for beginning the Teaching Internship (TCHG 510 or 511/512)**

- GPA of 3.00 or higher
- Praxis II passed
- VCLA passed and score report submitted
- Proof of AED/First Aid/CPR submitted
- Child Abuse and Neglect: Recognizing, Reporting, and Responding for Educators Module certificate submitted
- Virginia State and Local Civic Engagement Module certificate submitted (elementary only)
- Dyslexia Awareness Module Training certificate submitted
- Behavior Intervention and Support Module certificate submitted
- Cultural Competency Training Module certificate submitted
- Clear background check

**Satisfactory Completion of Practica/Internships**

Candidates for the MAT degree or the Initial Licensure Program must satisfactorily complete all assigned field experiences. If a teacher and/or school principal requests that the candidate be removed from the school setting due to unprofessional behaviors or lack of instructional skills, then the student may be removed from the placement and dismissed from the program. Alternately, for good cause shown, the Director of Field Experiences may attempt to find another placement at a different school (and possibly a different district). If there is a second occurrence where the candidate's removal is requested, then no further placements will be made and the student will be dismissed from the program.

**Licensure Requirements**

The student completing the Teacher Preparation Program with recommendation for state licensure must accomplish all of the following:

- Successful completion of all required program coursework and field work;
- Passing scores on the appropriate PRAXIS II exam and other state-mandated examinations;

NOTE: The license is conferred by the Virginia Department of Education, and the commission of a felony, or a misdemeanor involving children and/or drugs, may result in the denial of issuance of the license. Questions concerning this should be directed to the Director of Teacher Preparation, Dr. Jean Filetti at [filetti@cnu.edu](mailto:filetti@cnu.edu) or (757) 594-7388.

**MAT Degree Requirements**

- Successful completion of minimum hours of the master's degree program coursework in good standing;
- 3.0 GPA in graduate coursework;
- Submission of the *Intent to Graduate* form by the published due dates.

**Professional Requirements**

Evidence of three conference workshops (at least two hours each at different venues)

80-hour field log submitted

Verified membership in a professional organization

**Graduate Assistantships**

Graduate assistantships are available. See *Graduate Catalog* page 33.

**COURSE PLAN FOR MAT FIVE-YEAR PROGRAM  
WITH LICENSURE  
ART (VISUAL ARTS) PK - 12**

\*Denotes courses that are required for licensure and must be completed prior to the internship.

**GRADUATE COURSE REQUIREMENTS****SENIOR YEAR**

*(Select two of the three; the third course will be taken in fall of the professional year or by permission of the Graduate Program Director during the senior year.)*

	<b>Credits</b>
*FNAR 534                      Theory and Practice of Art Education <b>F</b>	3
FNAR 538                      Apprenticeship in Teaching Art	3
*PSYC 544                      Assessment of Learning	3

**PROFESSIONAL YEAR - SUMMER**

*TCHG 516-517                  Curriculum and Instruction I, II	3
FNAR 535                      Integrating the Visual Arts	3
*TCHG 543                      Classroom Management and Discipline	2

**PROFESSIONAL YEAR - FALL**

*ENGL 522                      Content Area Literacy	3
*PSYC 535                      Exceptional Learner <b>F</b>	3
SOCL 501 or TCHG 550                      Multiculturalism, Diversity and Education or Teaching Across Cultures <b>F</b>	3
*TCHG 518L                      Secondary and PK-12 Field Practicum <b>F</b>	1
3 Credit Course                  Selected from Senior Year courses if not taken	(3)

*120 HOURS                      Field Experience*

**PROFESSIONAL YEAR - SPRING**

TCHG 580                      Technology for Teachers	1
TCHG 510 OR 511 and 512      Teaching Internship <b>F</b>	8

<b>TOTAL GRADUATE COURSE HOURS</b>	<b>36</b>
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**Undergraduate Content and Support Course Requirements**

ENGL 123, 223                  First-year and Second-year Writing Seminars	6
MATH 125                      Elementary Statistics	3
COMM 201 or THEA 232          Public Speaking or Acting I	3
PSYC 207 or PSYC 208          Life-span Development or Child Development	3
PSYC 312                      Educational Psychology	3
SOCL 314                      Education, Culture and Society	3
SOCL 314L                      Education, Culture and Society Lab <b>F</b>	1
CPSC 110                      Introduction to Computing	3
FNAR 201-202                  World Art in Context I, II	6
FNAR 117                      3-D Design	3
FNAR 118                      2-D Design	3
FNAR 121                      Drawing I	3
FNAR 128                      Introduction to Digital Media	3
FNAR 224                      Painting I	3
FNAR 252                      Printmaking I	3
FNAR 241 or FNAR 251          Ceramics I or Sculpture I	3
FNAR 322                      Advanced Figure Drawing	3
FNAR 488                      Senior Seminar and Studio Art	3
9 CREDITS                      Upper-level Art History Electives	9

**F** denotes that a class has a required field experience component in public schools.



**Support Courses required:**

MATH 125 & 130	Mathematics Electives or higher	6
CHEM 121/121L	General Chemistry I & Lab	4
CHEM 122/122L	General Chemistry II & Lab	4
CHEM 221/221L	Organic Chemistry I, II & Lab	4
CHEM 222/222L	Organic Chemistry II & Lab	4
PHYS 151/151L	Intermediate Physics & Lab	4
PHYS 152/152L	Intermediate Physics & Lab	4

**F** denotes that a class has a required field experience component in public schools.

**COURSE PLAN FOR MAT FIVE-YEAR PROGRAM  
WITH LICENSURE  
CHEMISTRY 6 - 12**

\*Denotes courses that are required for licensure and must be completed prior to the internship.

**GRADUATE COURSE REQUIREMENTS****SENIOR YEAR -**

CHEM Electives:

Six credits of graduate CHEM electives

**Credits**

6

**PROFESSIONAL YEAR - SUMMER**

*TCHG 516, 517	Curriculum and Instruction I, II	3
*TCHG 543	Classroom Management and Discipline	2
*NSCI 570	Teaching STEM	3

**PROFESSIONAL YEAR - FALL**

*ENGL 522	Content Area Literacy	3
*PSYC 535	Exceptional Learner <b>F</b>	3
SOCL 501 or TCHG 550	Multiculturalism, Diversity and Education or Teaching Across Cultures <b>F</b>	3
*TCHG 518L	Secondary and PK-12 Field Practicum <b>F</b>	1
*PSYC 544	Assessment of Learning	3

*120 HOURS**Field Experience***PROFESSIONAL YEAR - SPRING**

TCHG 580	Technology for Teachers	1
TCHG 510 OR 511 and 512	Teaching Internship <b>F</b>	8

**TOTAL GRADUATE COURSE HOURS**

36

**Undergraduate Content and Support Course Requirements**

ENGL 123, 223	First-year and Second-year Writing Seminars	6
COMM 201 or THEA 232	Public Speaking or Acting I	3
PSYC 207 or PSYC 208	Life-span Development or Child Development	3
PSYC 312	Educational Psychology	3
SOCL 314	Education, Culture and Society	3
SOCL 314L	Education, Culture and Society Lab <b>F</b>	1
CPSC 110	Introduction to Computing	3
MATH 125	Elementary Statistics	3
MATH 140 or 148	Calculus & Analytic Geometry	4
MATH 240	Intermediate Calculus	4
CHEM 121/121L-122/122L	General Chemistry I & II & Laboratory	8
PHYS 201/201L -PHYS 202/202L	General Physics	8

**Major Courses in Chemistry:**

CHEM 221/221L-222/222L	Organic Chemistry I, II & Laboratory	8
CHEM 341-342/342L	Physical Chemistry I, II & Laboratory	7
CHEM 361/361L	Analytical Chemistry & Laboratory	4
CHEM 391	WI: Investigating Chemical Literature	3
CHEM 401/401L	Inorganic Chemistry & Laboratory	4
CHEM 445/445L	Instrumental Analysis & Laboratory	4
CHEM 492	WI: POGIA-Comprehensive Capstone Course	3
6 Credits	300/400 Chemistry Electives	6

**F** denotes that a class has a required field experience component in public schools.

**COURSE PLAN FOR MAT FIVE-YEAR PROGRAM  
WITH LICENSURE  
ELEMENTARY PK- 6**

\*Denotes courses that are required for licensure and must be completed prior to the internship.

**GRADUATE COURSE REQUIREMENTS****SENIOR YEAR**

Select two of the three; the third course will be taken in fall of the professional year or by permission of the Graduate Program Director during the senior year. **Credits**

MLAN 511	Advanced Strategies in TESOL (3) <b>F</b>	3
*MATH 570	The Teaching of Elementary Mathematics <b>F</b>	3
*PSYC 535	The Exceptional Learner <b>F</b>	3

**PROFESSIONAL YEAR - SUMMER**

*PSYC 544	Assessment of Learning	3
*TCHG 516, 517	Curriculum and Instruction I, II <b>F</b>	3
*TCHG 543	Classroom Management and Discipline	2

**PROFESSIONAL YEAR - FALL**

*ENGL 521	Developing Elementary Writers and Readers <b>F</b>	3
SOCL 501 or TCHG 550	Multiculturalism, Diversity and Education or Teaching Across Cultures <b>F</b>	3
*PSYC 521	Reading Acquisition and Development	3
*PSYC 521L	Reading Acquisition and Development Lab <b>F</b>	1

*120 HOURS**Field Experience***PROFESSIONAL YEAR - SPRING**

TCHG 580	Technology for Teachers	1
TCHG 510 OR 511 and 512	Teaching Internship <b>F</b>	8

**TOTAL GRADUATE COURSE HOURS**36

\*ENGL 310, OR a comparable linguistics course, OR successful completion of CNU's Linguistics Competency Assessment is required for PSYC 521.

**Undergraduate Content and Support Course Requirements**

ENGL 123, 223	First-Year & Second-Year Writing Seminars	6
COMM 201 or THEA 232	Public Speaking or Acting I	3
PSYC 208	Child Development	3
PSYC 312	Educational Psychology	3
SOCL 314	Education, Culture and Society	3
SOCL 314L	Education, Culture and Society Lab <b>F</b>	1
CPSC 110	Introduction to Computing	3
MATH 125	Elementary Statistics	3
GEOG 210 or GEOG 201	Introduction to Human Geography Introduction to Geography	3
POLS 101	Power and Politics in America	3
HIST 111	The Ancient & Medieval World	3
HIST 121	Early America to the Civil War	3
HIST 122	Modern America: Reconstruction to Global Power	3
CHEM 103 (or higher)	Introductory Chemistry I	3
PHYS 141 (or higher)	How Things Work	3
BIOL 107 or 108	General Biology I or II	3
BIOL 109L CHEM Lab or PHYS 105L	General Biology Laboratory Elementary Physics Laboratory	1

(continued on next page)

ECON 200 or ECON 201 or ECON 202	Economic Way of Thinking Principles of Macroeconomics Principles of Microeconomics	3
ENGL 316	Children's Literature	3
MATH 109	Theoretical Foundations of Elem. School Mathematics	3
NSCI 310	The Study of Science	3

**F** denotes that a class has a required field experience component in public schools.



<b>Choose one of the following:</b>		3
ENGL 428	The Literary Booms (if topic is World Literature)	
ENGL 429	East-West Literary Relations	
ENGL 304	WI: Creativity, out of Conflict (if topic is World Literature)	
<b>Choose one of the following:</b>		3
ENGL 341`	The Invasion of America	
ENGL 342	Financial Fictions and the Rise of Realism	
ENGL 343	Postmodern America	
<b>Choose one of the following:</b>		3
ENGL 256	Introduction to Film Studies	
ENGL 356	Film, Theory and Culture	
ENGL 380	Film and Literature	
ENGL 381	The Roaring Twenties	
ENGL 385	American Film	
<b>Other required content courses:</b>		
ENGL 421	Shakespeare	3
ENGL 331	The Structure of English	3
ENGL 490	WI: Senior Seminar	3

F denotes that a class has a required field experience component in public schools.



**COURSE PLAN FOR MAT FIVE-YEAR PROGRAM  
WITH LICENSURE  
HISTORY AND SOCIAL SCIENCE 6 - 12**

\*Denotes courses that are required for licensure and must be completed prior to the internship.

**GRADUATE COURSE REQUIREMENTS****SENIOR YEAR**

Select two of the three; the third course will be taken in fall of the professional year or by permission of the Graduate Program Director during the senior year. **Credits**

HIST ____	510/530 History	3
HIST ____	510/530 History	3
*PSYC 535	Exceptional Learner <b>F</b>	3

**PROFESSIONAL YEAR - SUMMER**

*TCHG 516, 517	Curriculum and Instruction I, II	3
*TCHG 543	Classroom Management & Discipline	2
*GEOG 570	World Geography for Teachers	3

**PROFESSIONAL YEAR - FALL**

*ENGL 522	Content Area Literacy	3
*HIST 570	Methods for Teaching and Assessing Social Studies	3
SOCL 501 or TCHG 550	Multiculturalism, Diversity and Education or Teaching Across Cultures <b>F</b>	3
*TCHG 518L	Secondary and PK-12 Field Practicum <b>F</b>	1
3 Credit Course	Selected from Senior Year courses if not taken	(3)

*120 HOURS* *Field Experience*

**PROFESSIONAL YEAR - SPRING**

TCHG 580	Technology for Teachers	1
TCHG 510 OR 511 and 512	Teaching Internship <b>F</b>	8

**TOTAL GRADUATE COURSE HOURS** 36

**Undergraduate Content and Support Course Requirements**

**Student must earn a B.A./B.S. in History or Government or B.A. in American Studies**

ENGL 123, 223	First-Year & Second-Year Writing Seminars	6
COMM 201 or THEA 232	Public Speaking or Acting I	3
PSYC 207 or PSYC 208	Life-span Development or Child Development	3
PSYC 312	Educational Psychology	3
SOCL 314/SOCL 314L	Education, Culture and Society & Lab <b>F</b>	4
CPSC 110	Introduction to Computing	3
MATH 125	Elementary Statistics	3
HIST 111-112G	The Ancient and Medieval World-The Modern World	6
HIST 121-122	Early America to the Civil War-Modern America	6
HIST 300	WI: Historical Methods and Historiography	3
HIST __, __	Two 300/400-level History courses	6
ECON 201 or ECON 202	Macroeconomics or Microeconomics (201 preferred)	3
GEOG 201-202 or GEOG 210-211	Intro to Geography I and II Intro to Human Geography & Geography of Human/Environment Interaction	6
POLS 100 or GOVT 101	Political Thought & Society or Power and Politics in America	3
POLS 202	State and Local Government	3
POLS 215	International and Comparative Politics	3
POLS __, __	Two 300/400-level Government courses	6

**F** denotes that a class has a required field experience component in public schools.

**COURSE PLAN FOR MAT FIVE-YEAR PROGRAM  
WITH LICENSURE  
MATHEMATICS 6 - 12**

\*Denotes courses that are required for licensure and must be completed prior to the internship.

**GRADUATE COURSE REQUIREMENTS**

**SENIOR YEAR**

**Credits**

Select two of the three; the third course will be taken in fall of the professional year or by permission of the Graduate Program Director during the senior year.

*MATH 555	Pedagogy, Assessment, and Research for the Secondary Math Teacher	3
*MATH 538	Apprenticeship in Teaching Mathematics	3
*PSYC 544	Assessment of Learning	3

**PROFESSIONAL YEAR - SUMMER**

*TCHG 516, 517	Curriculum and Instruction I, II	3
*TCHG 543	Classroom Management and Discipline	2
*NSCI 570	Teaching STEM	3

**PROFESSIONAL YEAR - FALL**

*ENGL 522	Content Area Literacy	3
*PSYC 535	Exceptional Learner	3
SOCL 501 or TCHG 550	Multiculturalism, Diversity and Education or Teaching Across Cultures	3
*TCHG 518L	Secondary and PK-12 Field Practicum <b>F</b>	1
3 Credit Course <i>120 HOURS</i>	Selected from Senior Year courses if not taken <i>Field Experience</i>	(3)

**PROFESSIONAL YEAR - SPRING**

TCHG 580	Technology for Teachers	1
TCHG 510 OR 511 and 512	Teaching Internship <b>F</b>	8

<b>TOTAL GRADUATE COURSE HOURS</b>	<b>36</b>
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**Undergraduate Content and Support Course Requirements**

ENGL 123, 223	First-Year & Second-Year Writing Seminars	6
COMM 201 or THEA 232	Public Speaking or Acting I	3
PSYC 207 or PSYC 208	Life-span Development or Child Development	3
PSYC 312	Educational Psychology	3
SOCL 314	Education, Culture and Society	3
SOCL 314L	Education, Culture and Society Lab <b>F</b>	1
CPSC 110	Introduction to Computing	3
MATH 125	Elementary Statistics (May be replaced by MATH 435)	3
MATH 140	Calculus and Analytic Geometry	4
MATH 240	Intermediate Calculus	4
MATH 245	Proofs and Discrete Math	3
MATH 250	Multivariable Calculus	3
MATH 260	Linear Algebra	3
MATH 360	Real Analysis I	3
MATH 370	Modern Algebra I	3
MATH 378	Geometry : Elementary Geometry from an Adv Viewpoint	3
MATH 451 or MATH 499	Independent Learning Experiences or Independent Research	1-3
MATH 128	Introduction to Mathematical Programming	3
MATH _____	Six* 300/400-level Mathematics (excluding 499) (*may include up to nine credits of BIOL, PHYS, CPSC or three upper level sciences)	18
MATH _____	One 400-level Mathematics course (excluding 499)	3
CPSC 150/150L	Introduction to Programming and Lab	4

F denotes that a class has a required field experience component in public schools.

**COURSE PLAN FOR MAT FIVE-YEAR PROGRAM  
WITH LICENSURE  
MUSIC - CHORAL PK - 12**

\*Denotes courses that are required for licensure and must be completed prior to the internship.

**GRADUATE COURSE REQUIREMENTS**

**SENIOR YEAR**

*MUSC 510	Foundations of Music Education	3
MUSC 518	Secondary Choral Methods	3

**PROFESSIONAL YEAR - SUMMER**

*PSYC 535	Exceptional Learner <b>F</b>	3
*TCHG 516, 517	Curriculum and Instruction I, II	3
*TCHG 543	Classroom Management and Discipline	2

**PROFESSIONAL YEAR - FALL**

MUSC 520	Choral Literature and Conducting	3
*MUSC 545	Contemporary Issues and Skills	3
MUSC 580	Jazz Ensemble Techniques	1
APP COND 533	Applied Choral Conducting	2
SOCL 501 or TCHG 550	Multiculturalism, Diversity and Education or Teaching Across Cultures	3
*TCHG 518L	Secondary and PK-12 Field Practicum <b>F</b>	1

*120 HOURS*                      *Field Experience*

**PROFESSIONAL YEAR - SPRING**

TCHG 580	Technology for Teachers	1
TCHG 510 OR 511 and 512	Teaching Internship <b>F</b>	8

<b>TOTAL GRADUATE COURSE HOURS</b>	<b>36</b>
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**Undergraduate Content and Support Course Requirements**

*Accepted for continuance in the Bachelor of Music in music education program is required.*

ENGL 123, 223	First-Year & Second-Year Writing Seminars	6
THEA 232	Acting I	3
PSYC 207 or PSYC 208	Life-span Development or Child Development	3
PSYC 312	Educational Psychology	3
SOCL 314	Education, Culture and Society	3
CPSC 110	Introduction to Computing	3
MATH 125	Elementary Statistics	3

**Applied Music and Ensembles**

APP MUSC 131-132, 132 or 134; 231 or 233; 232 or 234; 331 or 333; 332 or 334; 431 or 433; 423 or 434		8
MUSC 100 or 105		1
MUSC 125		1

(continued on next page)

**Music Theory and History**

MUSC 200	Music Technology	1
MUSC 209-210	Aural Skills I and II	2
MUSC 309-310	Aural Skills III and IV	2
MUSC 211-212	Music Theory I: Fundamentals and Counterpoint and Music Theory II: Diatonic Harmony	6
MUSC 311-312	Music Theory III: Chromatic Harmony and from and Music Theory IV: Form and Post-Tonal	6
MUSC 303-304-305	History of Western Music	9
MUSC 306	Global Transformations: "World Music" and the "World"	3
MUSC 401W or MUSC 490W	WI:Seminar in Music Bibliography The Falk Seminar in Music Historical Research	3
MUSC 415	Orchestration	1

**Music Techniques**

MUSC 220	Brass Instrument Techniques <b>F</b>	1
MUSC 230	Woodwind Instrument Techniques <b>F</b>	1
MUSC 240	Percussion Techniques <b>F</b>	1
MUSC 250	String Instrument Techniques <b>F</b>	1
MUSC 260	Voice Techniques <b>F</b>	1
MUSC 265-266	Foreign Language Diction I & II	2

**Conducting and Literature**

MUSC 314	Principles of Choral Conducting	3
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**Music Education**

MUSC 137	Introduction to Music Education	1
MUSC 337W	Music in the Elementary Schools	3

Completion of exit examination in music theory and music history with a score of 70% or higher.

**F** denotes that a class has a required field experience component in public schools.

**COURSE PLAN FOR MAT FIVE-YEAR PROGRAM  
WITH LICENSURE  
MUSIC - INSTRUMENTAL PK - 12**

\*Denotes courses that are required for licensure and must be completed prior to the internship.

**GRADUATE COURSE REQUIREMENTS**

**SENIOR YEAR**

*MUSC 510	Foundations of Music Education	3
MUSC 517	Secondary Instrumental Methods	3

**PROFESSIONAL YEAR - SUMMER**

*PSYC 535	Exceptional Learner	3
*TCHG 516, 517	Curriculum and Instruction I, II	3
*TCHG 543	Classroom Management and Discipline	2

**PROFESSIONAL YEAR - FALL**

MUSC 530 or 540	Wind or Orchestral Literature & Conducting	3
MUSC 545	Contemporary Skills and Issues	3
MUSC 580	Jazz Ensemble Techniques	1
SOCL 501 or TCHG 550	Multiculturalism, Diversity and Education or Teaching Across Cultures	3
APP COND 533	Applied Wind/Orchestral Conducting	2
*TCHG 518L	Secondary and PK-12 Field Practicum F	1

*120 HOURS*                      *Field Experience*

**PROFESSIONAL YEAR - SPRING**

TCHG 580	Technology for Teachers	1
TCHG 510 OR 511 and 512	Teaching Internship F	8

**TOTAL GRADUATE COURSE HOURS**                      36

**Undergraduate Content and Support Course Requirements**

*Accepted for continuance in the Bachelor of Music in music education program is required.*

ENGL 123, 223	First-Year & Second-Year Writing Seminars	6
MATH 125	Elementary Statistics	3
THEA 232	Acting I	3
PSYC 207 or PSYC 208	Life-span Development or Child Development	3
PSYC 312	Educational Psychology	3
CPSC 110	Introduction to Computing	3
SOCL 314	Education, Culture and Society	3

**Applied Music and Ensembles**

APP MUSC 131 or 133; 132 or 134; 231 or 233; 232 or 234; 331 or 333; 332 or 334; 431 or 433; 432 or 434		8
MUSC 101, 102 or 114		8
MUSC 115 or APP MUSC 130; MUSC 116 or APP MUSC 130; MUSC 215 or APP MUSC 130;		8
MUSC 216 or APP MUSC 130		8
MUSC 125		1

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**Music Theory and History**

MUSC 200	Music Technology	1
MUSC 209-210	Aural Skills I and II	2
MUSC 309-310	Aural Skills III and IV	2
MUSC 211-212	Music Theory I: Fundamentals and Counterpoint and Music Theory II: Diatonic Harmony	6
MUSC 311-312	Music Theory III: Chromatic Harmony and from and Music Theory IV: Form and Post-Tonal	6
MUSC 303-304-305	History of Western Music	9
MUSC 306	Global Transformations: "World Music" and the "World"	3
MUSC 401W OR MUSC 490	WI: Seminar in Music Bibliography Falk Seminar in Music Historical Research	3
MUSC 415	Orchestration	1

**Music Techniques**

MUSC 220	Brass Instrument Techniques <b>F</b>	1
MUSC 230	Woodwind Instrument Techniques <b>F</b>	1
MUSC 240	Percussion Techniques <b>F</b>	1
MUSC 250	String Instrument Techniques <b>F</b>	1
MUSC 260	Voice Techniques	1

**Conducting and Literature**

MUSC 316	Principles of Instrumental Conducting	3
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**Music Education**

MUSC 137	Introduction to Music Education	1
MUSC 337W	Music in Elementary Schools	3

Completion of exit examination in music theory and music history with a score of 70% or higher.

Chamber Music	4
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**F** denotes that a class has a required field experience component in public schools.

**COURSE PLAN FOR MAT FIVE-YEAR PROGRAM  
WITH LICENSURE  
PHYSICS 6 - 12**

\*Denotes courses that are required for licensure and must be completed prior to the internship.

**GRADUATE COURSE REQUIREMENTS****SENIOR YEAR**

Two graduate PHYS electives 6

**PROFESSIONAL YEAR - SUMMER**

*TCHG 516, 517	Curriculum and Instruction I, II	3
*TCHG 543	Classroom Management and Discipline	2
*NSCI 570	Teaching STEM	3

**PROFESSIONAL YEAR - FALL**

*PSYC 544	Assessment of Learning	3
*ENGL 522	Content Area Literacy	3
*PSYC 535	Exceptional Learner <b>F</b>	3
SOCL 501 or TCHG 550	Multiculturalism, Diversity and Education or Teaching Across Cultures	3
*TCHG 518L	Secondary and PK-12 Field Practicum <b>F</b>	1

*120 HOURS* *Field Experience*

**PROFESSIONAL YEAR - SPRING**

TCHG 580	Technology for Teachers	1
TCHG 510 OR 511 and 512	Teaching Internship <b>F</b>	8

**TOTAL GRADUATE COURSE HOURS** 36

**Undergraduate Content and Support Course Requirements**

ENGL 123, 223	First-Year & Second-Year Writing Seminars	6
COMM 201 or THEA 232	Public Speaking or Acting I	3
PSYC 207 or PSYC 208	Life-span Development or Child Development	3
PSYC 312	Educational Psychology	3
SOCL 314	Education, Culture and Society	3
SOCL 314L	Education, Culture and Society Lab <b>F</b>	1
CPSC 110	Introduction to Computing	3
ENGR 212/212L	Electronics/Electronics Laboratory	4
MATH 125	Elementary Statistics	3

**Core Courses:**

CPSC 150/150L-250/250L	Computers & Programming I & II and Labs	8
MATH 140	Calculus and Analytic Geometry	4
PHYS 201/201L-202/202L	General Physics and Lab	8
PHYS 340	Methods of Theoretical Physics	3

**Support Courses in Applied Physics:**

MATH 240	Intermediate Calculus	4
MATH 250	Multivariable Calculus	3
MATH 320	Ordinary Differential Equations	3

(continued on the next page)

**Major Courses in Applied Physics:**

ENGR 211/211L	Intro. to Electric Circuits & Electronics, & Lab	4
CPEN 214	Digital Logic Design	3
PHYS 301	Intermediate Classical Mechanics	3
PHYS 303	General Physics	3
PHYS 304	Electrostatics	3
PHYS 341	Design and Analysis of Experiments	3
PHYS 351	Modern Physics	3
PHYS 401 or 404	Models of Dynamical Systems or Electromagnetism	3
PHYS 402	Quantum Physics	3
PHYS 406	Thermodynamics	3

**Select two from the following:**

ENGR 212/212L	Electronics and Laboratory	4
PHYS 344	Intro to Astrophysics	3
PHYS 352	Device Physics	3
PHYS 421	System Design Lab (Data Acquisition)	3
PHYS 431	Optical Physics	3
PHYS 441	Modeling and Simulation	3
MATH 350	Vector Calculus	3
MATH 355	Complex Variables	3
PCSE 498	WI: Capstone Project	3

**F** denotes that a class has a required field experience component in public schools.

**COURSE PLAN FOR MAT FIVE-YEAR PROGRAM  
WITH LICENSURE  
SPANISH PK - 12**

\*Denotes courses that are required for licensure and must be completed prior to the internship.

**GRADUATE COURSE REQUIREMENTS****SENIOR YEAR**

(Select two of the three; the third course will be taken in fall of the professional year or by permission of the Graduate Program Director during the senior year.)

MLAN 511	Advanced Strategies in TESOL	F	3
*MLAN 570	Teaching Modern Languages		3
*PSYC 544	Assessment of Learning		3

**PROFESSIONAL YEAR - SUMMER**

*PSYC 535	Exceptional Learner		3
*TCHG 516, 517	Curriculum and Instruction I, II		3
*TCHG 543	Classroom Management and Discipline		2

**PROFESSIONAL YEAR - FALL**

*SPAN 538	Apprenticeship in Teaching Spanish	F	3
*ENGL 522	Content Area Literacy		3
SOCL 501 or TCHG 550	Multiculturalism, Diversity and Education or Teaching Across Cultures		3
*TCHG 518L	Secondary and PK-12 Field Practicum	F	1
3 Credit Course	Selected from Senior Year courses if not taken		(3)

*120 HOURS**Field Experience***PROFESSIONAL YEAR - SPRING**

TCHG 580	Technology for Teachers		1
TCHG 510 OR 511 and 512	Teaching Internship	F	8

**TOTAL GRADUATE COURSE HOURS**

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36**Undergraduate Content and Support Course Requirements**

ENGL 123, 223	First-Year & Second-Year Writing Seminars		6
COMM 201 or THEA 232	Public Speaking or Acting I		3
PSYC 207 or PSYC 208	Life-span Development or Child Development		3
PSYC 312	Educational Psychology		3
SOCL 314	Education, Culture and Society		3
SOCL 314L	Education, Culture and Society Lab	F	1
CPSC 110	Introduction to Computing		3
MATH 125	Elementary Statistics		3

**Modern Language Core:****Choose one of the following:**

MLAN 203	International Folktales in English Translation		3
MLAN 205	The Novel in English Translation		3
MLAN 206	The Drama in English Translation		3
MLAN 207	International Cinema		3

**Required:**

MLAN 308	Cross-Cultural Awareness		3
MLAN 310	Texts in Context		3
MLAN 490	Capstone Course in Modern Languages		3

(continued on the next page)

**Major and Elective Studies**

**Choose two of the following:**

SPAN 301	Grammar and Composition	3
SPAN 303	Spanish in the Digital Age	3

**Choose one of the following:**

SPAN 302	Advanced Spanish Conversation	3
SPAN 308	Conversation via Cinema	3

**Choose two of the following:**

SPAN 351	Introduction to Latin-American Literature I	3
SPAN 352	Introduction to Latin-American Literature II	3
SPAN 353	Introduction to Spanish Literature I	3
SPAN 354	Introduction to Spanish Literature II	3

**Choose one of the following:**

SPAN 471	Hispanic Visual Culture and the Arts	3
SPAN 472	Hispanic Popular Culture	3
SPAN 473	Hispanic Literature and Social Issues	3

**Select:**

6 CREDITS                      Select two Spanish courses at the 300 level or higher that have not been used to satisfy one the above categories

**F** denotes that a class has a required field experience component in public schools.

## MASTER OF SCIENCE IN APPLIED PHYSICS AND COMPUTER SCIENCE FIVE-YEAR PROGRAM

This five-year program leads to both a Bachelor of Science degree and a Master of Science in Applied Physics and Computer Science degree. By continuing an extra year to obtain the M.S., lifetime earnings and the potential for increased opportunities and job satisfaction can increase significantly. The program is very flexible and students will still receive the B.S. in their degree program once they complete the requirements, even if they do not complete the M.S. program. Interested students should talk to their advisor early in their program since course sequencing is critical to success.

### Concentration Areas

**M.S. - APCS Five-year students select a concentration from one of the following:**

- Computer Science
- Computer Systems Engineering and Instrumentation
- Applied Physics

### Admission Requirements

Criteria for student admission into a five-year program:

- a) Undergraduate cumulative GPA of 3.0 or higher. Transfer students must have earned at least 12 hours of credit at CNU with a GPA of 3.0 or higher.
- b) GPA in the student's major of at least 3.0.
- c) Submit satisfactory scores on one of the following exams (must be less than five years old):
  - i) the SAT taken on or after March 1, 2016 a score of 1170 with at least 580 on the Evidence-based Reading & Writing section and at least 560 on the Math section;
  - ii) the SAT taken prior to March 1, 2016 a score of 1100 with at least 530 on the Verbal section and 530 on the Math section;
  - iii) A minimum ACT composite score of 24, with the ACT math score no less than 22, and an English plus Reading score no less than 46;
  - iv) A Graduate Record Examination (GRE) score of at least 295 for Verbal and Quantitative sections combined.
- d) Two completed recommendation forms. One must be from a faculty member in the major who has taught or mentored the student in a major course or research project.
- e) Students apply for admission to a five-year program by February 1 of the junior year.
- f) A Program of Study or plan of the five-year program reviewed by the advisor is highly recommended.

A student admitted to the five-year program remains an undergraduate student until undergraduate graduation. Admittance to this program does not confer graduate status. However, five-year students do not need to request to take graduate courses as an undergraduate. In addition, they are automatically admitted to the graduate program upon graduation as long as they meet the program's requirements.

### Undergraduate Program Requirements

- a) To continue in the five-year program a student must maintain a 3.0 GPA, and remain in good standing by earning a grade of *B-* or better in any graduate course taken while in the undergraduate status.
- b) During the senior year, the MS-APCS five-year student will enroll in up to twelve (12) graduate credit hours that will be transferred to the graduate transcript. Only the courses and the credits are posted to the graduate transcript. No grades are posted for the transferred courses. The student will be responsible for completing 120 credits for the undergraduate degree plus up to twelve graduate credits. While credit hours for graduate courses are transferred to the graduate transcript, subject to the requirements as described, those courses may still be used to meet program requirements for the undergraduate degree. For example, a physics major who otherwise has completed the minimum 120 credit hours and who takes PHYS 502 will have three hours transferred to the graduate transcript, and yet completion of PHYS 502 will meet the PHYS 402 undergraduate requirement.

- c) Upon completion of the normal requirements in their respective undergraduate programs, a bachelor's degree will be awarded to the student.

### Graduate Course Hours

Graduate credit hours taken as a five-year B.S./M.S. undergraduate are subject to the following requirements:

- a) A maximum of twelve hours of graduate credit will be allowed while classified as an undergraduate.
- b) All courses must be approved by the student's advisor.
- c) The student will be held to the same standards in these classes as any other graduate student.
- d) Upon completion of their undergraduate degree, students in the five-year program will be required to take additional graduate hours so that the number of credit hours on the graduate transcript is a minimum of 30 hours of graduate credits. A minimum of 18 hours must be earned while in graduate status.

Five-year programs are generally thesis-track programs. Five-year non-thesis students are required to take 36 credits. The non-thesis track may be an option in certain circumstances. Contact the PCSE Graduate Program Director for more information.

### Example of Five-Year Program Course of Study

#### Undergraduate Status

Graduate courses taken in senior year (to be moved to graduate transcript)	12 credits
Undergraduate course hours	<u>120 credits</u>
Total	132 credits

#### Graduate Status

Graduate course hours transferred from undergraduate transcript	12 credits
Summer, Fall, Spring	<u>18 credits</u>
Total for MS in APCS	30 credits

Graduation requirements for the M.S. in Applied Physics and Computer science are listed on page 102.

**M.S. APCS FIVE-YEAR PROGRAM OF STUDY  
WITH A CONCENTRATION IN  
COMPUTER SCIENCE**

**Academic Prerequisites**

All applicants should have completed a three-semester sequence in mathematics, including at least two semesters of calculus. Programming should include a strong familiarity with a modern computer language such as Python, Java, or C++ and theory up to the level of data structures. It is assumed that these courses are at least at the level of the following texts: Anton, *Calculus*; Liang, *Java Programming*; Aho, Hopcroft and Ullman, *Data Structures*; Mano, *Computer Engineering*. Students who do not have all prerequisites may, in some cases, be allowed to take a graduate independent study course to develop the necessary background for further graduate work.

**Plan of Study**

To ensure a depth and focus appropriate to the master's level and student's interests, the student's Plan of Study must be approved by the Graduate Program Director.

**Core Courses****9 credits**

CPSC 501      Software System Design and Implementation (3)  
CPSC 502      Communications I (Computer Networks) (3)  
CPSC 510      Artificial Intelligence I (3)

**Concentration Courses****12 credits**

Select any four CPSC or PCSE courses from the M.S. in Applied Physics and Computer Science program.

*NOTE: If PCSE 579 is successfully completed three times, it is treated as if the student completed a three-credit course and will be applied as such to the graduation requirements.*

**Thesis****9 credits**

PCSE 699      Thesis Research (1-9)

**Total for MS in APCS Five-year Program of Study****30 credits**

**M.S. APCS FIVE-YEAR PROGRAM OF STUDY  
WITH A CONCENTRATION IN  
COMPUTER SYSTEMS ENGINEERING AND INSTRUMENTATION**

**Academic Prerequisites**

All applicants should have completed a two-semester sequence in physics, including mechanics and at least two labs; a five-semester sequence in mathematics, including calculus, matrix methods and differential equations; programming, including data structures; a course in computer organization and architecture; and a course with a lab in circuit analysis. It is assumed that these courses are at least at the level of the following texts: Serway, *Classical and Modern Physics*; Anton, *Calculus*; Williams, *Linear Algebra with Applications*; Boyce and DiPrima, *Ordinary Differential Equations*; Liang, *Java Programming*; Aho, Hopcroft and Ullman, *Data Structures*; Mano, *Computer Engineering*; Hayt and Kemmerly, *Circuit Theory*.

**Plan of Study**

To ensure a depth and focus appropriate to the master's level and student's interests, the student's Plan of Study must be approved by the Graduate Program Director.

**Core Courses****9 credits**

PHYS 521	Computer Architecture (3)
CPSC 501	Software System Design and Implementation (3)
CPSC 502	Communications I (Computer Networks) (3)

**Concentration Courses****12 credits**

Select four courses from the M.S. in Applied Physics and Computer Science program. The courses must reflect the hardware and software nature of this concentration. *NOTE: If PCSE 579 is successfully completed three times, it is treated as if the student completed a three-credit course and will be applied as such to the graduation requirements.*

Listed below are some examples:

PCSE 503	Data Acquisition (3)
PHYS 522	Microprocessor-based Systems (3)
PHYS 621	Digital Signal Processing (3)
CPSC 525	Object Oriented Programming and Design (3)
CPSC 550	Distributed Operating Systems (3)
CPSC 611	Communications II (3)
CPSC 621	Parallel Processing (3)

**Thesis****9 credits**

PCSE 699	Thesis Research (1-9)
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**Total for MS in APCS Five-year Program of Study****30 credits**

**M.S. APCS FIVE-YEAR PROGRAM OF STUDY  
WITH A CONCENTRATION IN  
APPLIED PHYSICS**

**Academic Prerequisites**

All applicants should have completed a three-semester sequence in physics, including modern physics and at least two labs; a five-semester sequence in mathematics, including calculus, matrix methods and differential equations; programming, including data structures; and a course with a lab in circuit analysis. It is assumed that these courses are at least at the level of the following texts: Serway, *Classical and Modern Physics*; Anton, *Calculus*; Williams, *Linear Algebra with Applications*; Boyce and DiPrima, *Ordinary Differential Equations*; Liang, *Java Programming*; Aho, Hopcroft and Ullman, *Data Structures*; Hayt and Kemmerly, *Circuit Theory*.

**Plan of Study**

To ensure a depth and focus appropriate to the master's level and student's interests, the student's Plan of Study must be approved by the Graduate Program Director.

**Core Courses****9 credits**

PHYS 501      Models of Dynamical Systems (3)  
PHYS 504      Electromagnetic Theory (3) and  
Either  
PHYS 502 or    Quantum Physics (3) or  
PHYS 506      Thermodynamics & Statistical Physics (3)

**Concentration Courses****12 credits**

Select any four PHYS or PCSE courses from the M.S. in Applied Physics and Computer Science program, not including any course taken to fulfill the core courses requirement. CPSC 501 is also an acceptable choice. *NOTE: If PCSE 579 is successfully completed three times, it is treated as if the student completed a three-credit course and will be applied as such to the graduation requirements.*

**Thesis****9 credits**

PCSE 699      Thesis Research (1-9)

**Total for MS in APCS Five-year Program of Study**

**30 credits**

## M.S. IN ENVIRONMENTAL SCIENCE FIVE-YEAR PROGRAM

The Master of Science in Environmental Science is designed for current and prospective students in the rapidly growing field of environmental monitoring and conservation. This accelerated program allows students to begin work on Master of Science in Environmental Science program requirements while an undergraduate, permitting CNU students to receive both a Bachelor's degree and a Master's degree in five years.

This degree program provides a solid background in ecological and environmental conservation theory, and is flexible enough to fit the interests and needs of a wide variety of students. The program is designed for students planning to pursue a Ph.D. or students interested in careers involving environmental assessment, monitoring or conservation.

### How and When to Apply

After completion of 65 credit hours of undergraduate study, the student submits the application to the Five-Year BS/MS Program no later than February 1 of the junior year. The *Application for Admission to the Five-Year Program* is available at: [cnu.edu/admission/graduate/fiveyear](http://cnu.edu/admission/graduate/fiveyear). The application and all supporting documents/materials are reviewed by a Graduate Admission Committee and the Graduate Studies office. Admission into the five-year program is competitive, and applications are reviewed holistically. Because it is an accelerated program, applicants are expected to be ready for graduate-level research. Ideal candidates have a strong undergraduate transcript, the ability to work independently and see a project to completion, an interest in scientific research, and an established relationship with a potential thesis advisor. Students not accepted into the five-year program may apply for the Traditional program in their Senior year.

### Admission Requirements

Components of the application for the five-year program:

- a) A transcript showing undergraduate coursework and GPA. For transfer students, a transcript from each institution where the student has earned 12 or more credits is required.
- b) Resume with the following information:
  - Contact information
  - Diplomas and degrees awarded and in progress
  - Awards, honors, and grants
  - Work experience, both volunteer and paid
  - Extracurricular activities, including participation in research
  - Interests and skills related to environmental science
- c) Answers to the following prompts (250 words or less for each prompt)
  - i) Explain why you are interested in pursuing a Master's degree in Environmental Science, the areas of study in Environmental Science that you find interesting, and your long-term academic and career goals.
  - ii) Describe your academic path to graduate school. You may choose to describe a course or experience that was instrumental in setting you on a path to environmental science, other possible majors or career trajectories you have considered, time spent away from college, academic hurdles and accomplishments, etc. If you have faced circumstances that have negatively affected your academic career to date, it would be appropriate to explain them here.
  - iii) Describe a challenging project that you have completed, state why it was challenging, and explain the strategies you used to overcome obstacles. The project may be academic in nature but also may be related to a job, a hobby, or an extracurricular activity.
  - iv) If you have participated in research either in a class or outside of class, describe your project and what aspects of research you find rewarding. If you have not participated in research yet, explain why you are interested in conducting research as part of coursework and/or a thesis in a Master's degree.
  - v) The Master's in Environmental Science program at Christopher Newport values and supports sociocultural diversity. In your experience and/or opinion, how do a diversity of views, experiences, and ideas promote research and scholarship goals in environmental science?

- d) Two completed recommendation forms are required. One must be from a faculty member in the major who has taught or mentored the student in a major course or research project.
- e) Ranking of preferred thesis advisors. Applicants will be provided with a list of faculty currently taking thesis students and potential thesis topics. Prospective students should also contact faculty members with similar research interests to determine if they are accepting new graduate students and are encouraged to speak with the Graduate Program Director if they need assistance selecting a faculty member to contact.
- f) Students will also provide evidence of satisfactory completion of undergraduate coursework in Biology and Chemistry that is suitable preparation for graduate coursework in environmental science. At a minimum, students need to have taken: a college-level mathematics or statistics course; an introductory sequence in Biology and upper-level coursework in Chemistry or vice versa; and for thesis students, coursework appropriate for thesis topic preparation. More coursework in the sciences is favorable.
- g) Optional: applicants may submit ACT, SAT, or GRE scores if desired. Standardized test scores are not a required component of the application and lack of test scores will not reduce the quality of an application.

#### Five-Year Undergraduate Program Requirements

- a) Upon acceptance into the five-year program, students work with their academic advisors and the Graduate Program Director to determine a specific Plan of Study. Students begin taking graduate courses in their senior year at CNU.
- b) To continue in the five-year program a student must maintain a 3.0 GPA, and remain in good standing by earning a grade of *B-* or better in any graduate course taken while in the undergraduate status.
- c) Upon completion of the normal requirements in the student's undergraduate program, a bachelor's degree will be awarded to the student.

#### Graduate Course Hours

Graduate credit hours taken as a five-year B.S./M.S. undergraduate are subject to the following requirements:

- a) A maximum of twelve (12) hours of credit will be allowed while classified as an undergraduate.
- b) All courses must be approved by the student's advisor and be part of the student's Plan of Study.
- c) The student will be held to the same standards in these classes as a graduate student.
- d) To continue to take graduate courses as an undergraduate, a student must complete each course with a grade of *B-* or better.
- e) **If a graduate course is used to satisfy a requirement of the undergraduate major then the student must get the course substitution approved by the department chair to substitute the graduate course for a required course in the major. Any graduate-level course used to satisfy undergraduate major requirements and/or to satisfy the required 120 credits for an undergraduate degree will not be eligible to be transferred to the graduate transcript.**
- f) Five-year students are required to do the thesis option in order to complete the curriculum within the five years
- g) Students in the five-year program who have taken graduate courses as undergraduates beyond the 120 credits required for the undergraduate degree will have up to 12 graduate credits moved to their graduate transcripts.
- h) **The minimum number of credit hours on the graduate transcript must total at least 30 overall. A minimum of 18 hours must be earned while in graduate status.**

**Example of Five-year Course of Study**

Five-year student takes 12 graduate credit hours while in undergraduate status

**Undergraduate Status**

Graduate courses taken in senior year (12 credits to be moved to graduate transcript)	12 credits
Undergraduate course hours	<u>120 credits</u>
Total	132 credits

**Graduate Status**

Graduate course hours transferred from undergraduate transcript	12 credits
Summer	2 credits
Fall	10 credits
Spring	<u>6 credits</u>
Total for MS in ENVS	30 credits

**Graduation Requirements for the M.S. in Environmental Science are listed on page 108 and 109.**

**MASTER OF SCIENCE IN ENVIRONMENTAL SCIENCE  
FIVE-YEAR PROGRAM OF STUDY**

**Core Courses (6 credits)**

ENVS 505	Technical and Scientific Writing (3)
ENVS 510	Biometry (3)

**Concentration Courses (18 credits)**

ENVS 518	Biological Conservation: Theory & Practice (3)
ENVS 519	Restoration Ecology (3)
ENVS 520	Community Ecology (3)
ENVS 522	Summer Field Studies (2)
ENVS 525	Environmental Regulations (3)
ENVS 530	Biogeography (3)
ENVS 532/532L	Wetlands Ecology & Lab (4)
ENVS 534/534L	Marine Ecology & Lab (4)
ENVS 535/535L	Ornithology & Lab (4)
ENVS 538	Limnology and Aquatic Biology (3)
ENVS 538L	Limnology and Aquatic Biology Lab (1)
ENVS 540/540L	Environmental Microbiology & Lab (4)
ENVS 545/545L	Mammalogy & Lab (4)
ENVS 550	Global Change (3)
ENVS 555/555L	GIS & Spatial Analysis Techniques & Lab (4)
ENVS 575	Seminar in Scientific Communication (3)
ENVS 590	Seminars in Environmental Science (1)
ENVS 595	Advanced Topics in Environmental Science (1-3 cr.)
ENVS 599	Independent Study (1-3 cr.)
ENVS 690	Evidence-Based Decision Making in Environmental Science (3)
CHEM 543	Atmospheric Chemistry (3)
CHEM 545/545L	Instrumental Methods in Chemistry & Lab (4)
CHEM 565	Environmental Chemistry (3)
CHEM 570	Advanced Organic Chemistry (3)
CHEM 599	Independent Study (1-3 cr.)

**Thesis (6 credits)**

ENVS 699	Thesis Research
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**Total for MS in ENVS**

**Five-Year Program of Study      30 credits**

## MASTER'S DEGREE PROGRAMS

CNU offers four master's programs for the educational advancement and professional enhancement of traditional applicants, those with a bachelor's degree earned prior to beginning of graduate study.

### **Master of Arts in Teaching**

### **Master of Financial Analysis**

### **Master of Science in Applied Physics and Computer Science**

### **Master of Science in Environmental Science**

#### **Master of Arts in Teaching**

The Master of Arts in Teaching (MAT) degree is designed for students who wish to become licensed teachers. This program offers students the latest advancements in content area teaching through hands-on activities, discussion and field experiences to prepare them with competencies necessary to enter the teaching profession. All students study instructional practices which are based on evidence provided by educational research. In addition, an emphasis is placed on the study of diversity in the United States and implications of that diversity for educational practice. MAT students select from one of the following endorsement areas: **Biology, Chemistry, Elementary, English, English as a Second Language (ESL), History & Social Science, Mathematics, Physics, Spanish or Visual Arts**. Christopher Newport University does not offer the MAT with Music endorsement (Choral and Instrumental) areas for traditional applicants; students must earn their undergraduate degree from CNU and pursue the MAT with Music endorsement through our five-year MAT program. Faculty are utilized from 12 academic departments and supplemented by practicing educational professionals to provide students with a strong background in their selected teaching area.

#### **Master of Financial Analysis**

The Master of Financial Analysis degree program is designed to prepare students for careers in accounting firms, investment and wealth management firms, financial institutions, and corporations, that require a deep understanding of data analytics and new technologies. Equipped with advanced knowledge of data analytics software such as Python and Tableau, and new technologies such as artificial intelligence and blockchain, and their application to analyze and communicate complex financial information, graduates of the program will be able to command higher salaries and quicker advancement than their counterparts in Master of Accountancy, Master of Finance, and Master of Business Administration programs.

The program will also prepare students to sit for various certifications. These certifications include the Chartered Financial Analyst (CFA), the Certified Financial Planner (CFP) and the Certified Public Accountant (CPA). The certification and the degree will enable the graduates of the program to advise companies on financial decisions and advise individuals on investment, insurance, retirement, and estate and tax planning within current regulatory and ethical frameworks.

#### **Master of Science in Applied Physics and Computer Science**

The degree is designed to produce graduates ready to make contributions to their professions and/or to continue toward a Ph.D. degree in applied physics, computer engineering or computer science. Students may select from three concentrations: Applied Physics, Computer Systems Engineering and Instrumentation, or Computer Science. The computer science concentration has research opportunities in artificial intelligence, software engineering, networking and communications, and robotics. The research opportunities in applied physics include nuclear physics at Jefferson Lab, gravitational wave physics at LIGO, modeling and simulation. There is commonality with both of these concentrations with the third concentration in computer systems engineering and instrumentation, with research opportunities including robotics, sensors and instrumentation systems design.

**Master of Science in Environmental Science**

The degree is designed to provide the knowledge and technical skills in environmental science that prepares students to work in the rapidly growing field of environmental monitoring and conservation, or to continue toward a Ph.D. degree. Students also develop the skills required for employment with environmental assessment/monitoring businesses and state government agencies. The program faculty are actively engaged in research projects and have access to a variety of excellent field research sites. Research currently is being conducted at local (e.g., Hoffer Creek Nature Preserve), regional (e.g., Great Dismal Swamp National Wildlife Refuge) and national (e.g., Death Valley National Park) sites as well as international locations. All courses are taught in the 160,000 square foot Forbes Hall, which contains 70 teaching labs and student research spaces as well as state of the art classrooms.

The **Graduate Studies office** is located in Tribble Library 243 and welcomes inquiries from those interested in the master's programs. From the Graduate Studies website [cnu.edu/admission/graduate](http://cnu.edu/admission/graduate), students may view the Graduate Catalog, apply for admission, or contact the Graduate Program Director of their choice. Contact Graduate Studies at [gradstudy@cnu.edu](mailto:gradstudy@cnu.edu) or by calling **757-594-8585** for additional information.

**MASTER OF ARTS IN TEACHING****Dr. Jean Filetti, Graduate Program Director****McMurrin Hall 253****filetti@cnu.edu****(757) 594-7388**

The Master of Arts in Teaching (MAT) is a practitioner-oriented degree designed to translate theory into effective instructional practice. The curriculum is based on recognized needs for teacher education as identified by bodies such as the National Board of Professional Teaching Standards and the Interstate Teacher Assessment and Support Consortium (InTASC). The mission of the CNU MAT Teacher Preparation Program is to prepare highly qualified teachers who are licensed to teach in the Commonwealth of Virginia and in reciprocal states throughout the United States.

**Endorsement Areas**

MAT students select an endorsement area from one of the following:

Art (Visual Arts)	PK - 12
Biology	6 - 12
Chemistry	6 - 12
Elementary	PK - 6
English	6 - 12
English as a Second Language	PK - 12
History and Social Science	6 - 12
Mathematics	6 - 12
Physics	6 - 12
Spanish	PK - 12

**The Teacher Preparation Program Curriculum**

The Teacher Preparation Program curriculum includes education and content courses that provide opportunities for students to learn subject knowledge and teaching methods appropriate to the endorsement area. A student teaching experience, with an impact study project, serves as the culminating event. The Teacher Preparation Program offers two curriculum options for those already holding a degree: Master of Arts in Teaching with Licensure and Initial Licensure.

**Master of Arts in Teaching with Licensure**

Those who have obtained a baccalaureate degree and desire to enroll in the Master of Arts in Teaching with Licensure program enter in a degree-seeking status. The curricula for the endorsement areas are shown on pages titled *Course Plan for MAT with Licensure, Already Degreed*.

**Initial Licensure**

Those who have obtained a baccalaureate degree and desire to seek a Commonwealth of Virginia license enter in a non-degree status. The curricula for the endorsement areas are shown on pages titled *Course Plan for Initial Licensure, Already Degreed*.

**Prerequisite Requirements**

Prerequisite courses are designed to meet the requirements of the Virginia Department of Education. Completion (or written plan for completion) of all prerequisite content and support courses is required prior to beginning either Teacher Preparation Programs. The prerequisite content and support courses are listed on the Course Plan pages.

**Admission Requirements****The Master of Arts in Teaching with Licensure**

1. A baccalaureate degree from an institutionally accredited college or university with a minimum grade point average (GPA) of 3.00 on a 4.00 scale;
2. An official transcript from the baccalaureate institution with the degree posted, and official transcripts for all graduate and undergraduate work taken at other institutions;
3. Three recommendation forms. These must be from professional educators who have observed the applicant's teaching or from professors who can attest that the applicant is likely to be able to be successful in graduate level academic work;
4. Program entry requirements (must be less than five years old);

<b>Reading Achievement — Select one of the following</b>	<b>Mathematical Achievement — Select one of the following</b>	<b>Writing Achievement — Select one of the following</b>
Praxis Core "Reading" (test 5712 or 5713) — score of 168	Praxis Core "Math" (test 5733) —score of 175 OR Praxis Core "Math" (test 5732) — score of 163	Praxis Core "Writing" (test 5722 or 5723) — score of 165
SAT (2016 or later) "Evidence-Based Reading and Writing" — score of 550	SAT (2016 or later) "Math" — score of 540	SAT (2016 or later) "Essay — Writing Dimension" — score of 6.0 0 (This test was discontinued as of August 2022, but students may submit their scores if they took the test previously.
ACT "Reading" — score of 22	ACT "Math" — score of 22	ACT "Writing" — score of 7.0
VCLA "Reading" Subtest— score of 235		VCLA "Writing Subtest— score of 235

5. A successful background check by Newport News Public Schools.
6. Two essays, demonstrating competence in written communication and dispositions for teaching. The responses must be submitted electronically. The suggested length for each essay is 250 words. The essays are a critical component of the application. An inadequate essay may result in remediation.
7. Resume showing experience in working with children/youth and/or in schools.
8. Certificate of Release or Discharge from Active Military Duty (DD 214), if applicable.

#### **Admission Requirements for Initial Licensure**

1. A baccalaureate degree from an institutionally accredited college or university with a minimum grade point average of 2.80 on a 4.00 scale;
2. An official transcript from the baccalaureate institution with the degree posted, and official transcripts for all graduate work taken at other institutions;
3. Three recommendation forms. These must be from professional educators who have observed the applicant's teaching or from professors who can attest that the applicant is likely to be able to be successful in graduate-level academic work;
4. Program entry requirements (must be less than five years old):

<b>Reading Achievement — Select one of the following</b>	<b>Mathematical Achievement — Select one of the following</b>	<b>Writing Achievement — Select one of the following</b>
Praxis Core "Reading" (test 5712 or 5713) — score of 168	Praxis Core "Math" (test 5733) —score of 175 OR Praxis Core "Math" (test 5732) — score of 163	Praxis Core "Writing" (test 5722 or 5723) — score of 165
SAT (2016 or later) "Evidence-Based Reading and Writing" — score of 550	SAT (2016 or later) "Math" — score of 540	SAT (2016 or later) "Essay — Writing Dimension" — score of 6.0 (This test was discontinued as of August 2022, but students may submit their scores if they took the test previously.
ACT "Reading" — score of 22	ACT "Math" — score of 22	ACT "Writing" — score of 7.0
VCLA "Reading" Subtest— score of 235		VCLA "Writing Subtest— score of 235

5. A successful background check by Newport News Public Schools.
6. Two essays, demonstrating competence in written communication and dispositions for teaching. The responses must be submitted electronically. The suggested length for each essay is 250 words. The essays are a critical component of the application. An inadequate essay may result in remediation.
7. Resume showing experience in working with children/youth and/or in schools.
8. Certificate of Release or Discharge from Active Military Duty (DD 214), if applicable.

#### **Admission Requirements for Non-degree/Non-program Status**

1. Hold a baccalaureate degree from an institutionally accredited college or university;
2. Provide an official transcript from the baccalaureate institution with the degree posted.
3. Apply and submit documents by the published application deadline.

Note: A limit of 12 graduate hours may be taken in this status.

#### **Teachers Taking Courses for Re-licensure or Professional Development**

Any regular or provisionally licensed Virginia teacher who desires to enroll in a graduate course for re-licensure or continued professional development may do so in a graduate non-degree status if they:

1. Hold a baccalaureate degree from an institutionally accredited college or university with a minimum grade point average of 3.00 on a 4.00 scale;
2. Provide a copy of the official transcript from the baccalaureate institution with the degree posted;
3. Apply and submit documents by the published application deadline;

NOTE: A limit of 12 graduate hours may be taken in this status. Registration for graduate courses is on a space-available basis.

#### **Changing from Non-degree Status to Degree-seeking Status (only for students enrolled in the Initial Licensure program)**

A non-degree student in the Initial Licensure program may apply to change to degree-seeking status in the MAT program if the student has completed 12 or more hours of MAT graduate courses with a cumulative 3.0 GPA or higher. To apply, the student submits the *Request for Change to Degree-seeking Status* form to Graduate Admission along with CNU graduate transcript.

#### **Goals of the Program**

Students who complete the Teacher Preparation Program at Christopher Newport University will demonstrate competence in these areas:

1. Planning and preparing for instruction based on knowledge of content, resources and students;
2. Creating a safe, orderly and nurturing environment that creates high expectations for all while recognizing and respecting diversity;
3. Delivering and assessing instruction to meet state-mandated and district objectives, adjusting methods as needed to engage and teach every child;
4. Professional responsibilities of dress, collegial behaviors, engagement with families, administrative duties, and self-directed growth.

#### **Requirements for beginning the Teaching Internship (TCHG 510 or 511/512)**

- GPA of 3.00 or higher
- Praxis II passed
- VCLA passed and score report submitted
- Proof of AED/First Aid/CPR submitted
- Child Abuse and Neglect: Recognizing, Reporting, and Responding for Educators Module certificate submitted
- Virginia State and Local Civic Engagement Module certificate submitted (elementary only)
- Dyslexia Awareness Training Module certificate submitted
- Behavioral Intervention and Support Training Module certificate submitted
- Cultural Competency Training Module certificate submitted
- Clear background check

**Satisfactory Completion of Practica/Internships**

Candidates for the MAT degree or the Initial Licensure Program must satisfactorily complete all assigned field experiences. If a teacher and/or school principal requests that the candidate be removed from the school setting due to unprofessional behaviors or lack of instructional skills, then the student may be removed from the placement and dismissed from the program. Alternately, for good cause shown, the Director of Field Experiences may attempt to find another placement at a different school (and possibly a different district). If there is a second occurrence where the candidate's removal is requested, then no further placements will be made and the student will be dismissed from the program.

**Licensure Requirements**

The student completing the Teacher Preparation Program with recommendation for state licensure must accomplish all of the following:

- Successful completion of all required program coursework and field work;
- Passing scores on the appropriate PRAXIS II exam and other state-mandated examinations;

NOTE: The license is conferred by the Virginia Department of Education, and the commission of a felony, or a misdemeanor involving children and/or drugs, may result in the denial of issuance of the license. Questions concerning this should be directed to the Director of Teacher Preparation, Dr. Jean Filetti at [filetti@cnu.edu](mailto:filetti@cnu.edu) or (757) 594-7388.

**MAT Degree Requirements**

- Successful completion of minimum hours of the master's degree program coursework in good standing;
- 3.0 GPA in graduate coursework;
- Submission of the *Intent to Graduate* form by the published due date

**Professional Requirements**

Evidence of three conference workshops (at least two hours each at different venues)  
80-hour field log submitted  
Verified membership in a professional organization

**Graduate Assistantships**

A limited number of graduate assistantships are available. See *Graduate Catalog* page 33.

**COURSE PLAN FOR MAT WITH LICENSURE  
ALREADY DEGREED  
ART (VISUAL ARTS) PK - 12**

\*Denotes coursework required for licensure and must be completed prior to internship

**GRADUATE COURSE REQUIREMENTS**

	<b>Credits</b>
<b>Other Required MAT Courses:</b>	
*FNAR 534                      Theory and Practice of Art Education (fall) <b>F</b>	3
FNAR 538                      Apprenticeship in Teaching Art (spring)	3
PSYC 544                      Assessment of Learning and Education	3
 <b>PROFESSIONAL YEAR - SUMMER</b>	
*TCHG 516-517                Curriculum and Instruction I,II	3
*TCHG 543                      Classroom Management and Discipline	2
*FNAR 535                      Integrating the Visual Arts	3
 <b>PROFESSIONAL YEAR - FALL</b>	
*ENGL 522                      Content Area Literacy	3
*PSYC 535                      Exceptional Learner	3
SOC 501                        Multiculturalism, Diversity & Education <b>OR</b>	3
TCHG 550                      Teaching Across Cultures (study abroad)	
*TCHG 518L                    Secondary/PK-12 Field Practicum <b>F</b>	1
 <i>120 hours of school experience prior to internship</i>	
 <b>PROFESSIONAL YEAR - SPRING</b>	
TCHG 510/511/512            Teaching Internship	8
TCHG 580                      Technology for Teachers	1
<b>TOTAL GRADUATE COURSE HOURS</b>	36

**PREREQUISITE CONTENT AND SUPPORT COURSE REQUIREMENTS**

An undergraduate degree in art is required. Coursework content aligned with the requirements below is required for licensure.

**General Education/Liberal Learning Coursework**

6 Credits each                      Written Communication Literacy

**Support Courses:**

PSYC 207 or PSYC 208            Life-span Development or Child Development	3
SOCL 314                          Education, Culture and Society and Lab	3
SOCL 314L                        Education, Culture and Society Lab <b>F</b>	1
PSYC 312                        Educational Psychology	3
CPSC 110                        Introduction to Computing	3
FNAR 117                        3-D Design	3
FNAR 118                        2-D Design	3
FNAR 121                        Drawing I	3
FNAR 128                        Introduction to Digital Media	3
FNAR 201, 202                World Art in Context I, II	6
FNAR 224                        Painting I	3
FNAR 241 or                    Ceramics I or	3
FNAR 251                      Sculpture I	3
FNAR 252                        Printmaking I	3
FNAR 322                        Advanced Figure Drawing	3
9 credits                        Upper-level Art History Electives	9

**F** denotes that a class has a required field experience component in public schools.

**COURSE PLAN FOR INITIAL LICENSURE  
ALREADY DEGREED  
ART (VISUAL ARTS) PK - 12**

\*Denotes courses that are required for licensure and must be completed prior to the internship.

**GRADUATE COURSE REQUIREMENTS**

		<b>Credits</b>
<b>PROFESSIONAL YEAR - SUMMER</b>		
*PSYC 544	Assessment of Learning	3
*TCHG 516,517	Curriculum and Instruction	3
*TCHG 543	Classroom Management and Discipline	2
<b>PROFESSIONAL YEAR - FALL</b>		
*ENGL 522	Content Area Literacy	3
*FNAR 534	Theory and Practice of Art Education <b>F</b>	3
*PSYC 535	Exceptional Learner	3
*TCHG 518L	Secondary/Pk-12 Field Practicum <b>F</b>	1
<i>120 hours of school experience prior to internship</i>		
<b>PROFESSIONAL YEAR: SPRING</b>		
TCHG 580	Technology for Teachers	1
TCHG 510 OR 511 and 512	Teaching Internship	8
<b>TOTAL GRADUATE COURSE HOURS</b>		27

**PREREQUISITE CONTENT AND SUPPORT COURSE REQUIREMENTS**

An undergraduate degree in art is required. Coursework content aligned with the requirements below is required for licensure.

**General Education/Liberal Learning Coursework**

6 Credits each                      Written Communication Literacy

**Support Courses:**

PSYC 207 or PSYC 208	Life-span Development or Child Development	3
SOCL 314	Education, Culture and Society and Lab	3
SOCL 314L	Education, Culture and Society Lab <b>F</b>	1
PSYC 312	Educational Psychology	3
CPSC 110	Introduction to Computing	3
FNAR 117	3-D Design	3
FNAR 118	2-D Design	3
FNAR 121	Drawing I	3
FNAR 128	Introduction to Digital Media	3
FNAR 201, 202	World Art in Context I, II	6
FNAR 224	Painting I	3
FNAR 241 or FNAR 251	Ceramics I or Sculpture I	3
FNAR 252	Printmaking I	3
FNAR 322	Advanced Figure Drawing	3
9 CREDITS	Upper-level Art History Electives	9

**F** denotes that a class has a required field experience component in public schools.

**COURSE PLAN FOR MAT WITH LICENSURE  
ALREADY DEGREED  
BIOLOGY 6 - 12**

\*Denotes courses required for licensure and must be completed prior to the internship.

**GRADUATE COURSE REQUIREMENTS**

	<b>Credits</b>
<b>6 HOURS FROM THE FOLLOWING ENVS ELECTIVES:</b>	<b>6</b>
ENVS 518	Biological Conversation: Theory & Practice (3)
ENVS 522	Summer Field Studies (2)
ENVS 530	Biogeography (3)
ENVS 532/532L	Wetlands Ecology and Lab (4)
ENVS 536/536L	Terrestrial Ecology and Lab (4)
ENVS 540/540L	Environmental Microbiology and Lab (4)
ENVS 550	Global Change (3)
ENVS 590	Seminars in Environmental Science (1)
ENVS 595	Advanced Topics in Environmental Science (1 - 4)
 <b>PROFESSIONAL YEAR - SUMMER</b>	
*TCHG 516, 517	Curriculum and Instruction I, II 3
*TCHG 543	Classroom Management and Discipline 2
*NSCI 570	Teaching STEM 3
 <b>PROFESSIONAL YEAR - FALL</b>	
*ENGL 522	Content Area Literacy 3
*PSYC 535	Exceptional Learner <b>F</b> 3
*PSYC 544	Assessment of Learning 3
SOCL 501 or TCHG 550	Multiculturalism, Diversity and Education or Teaching Across Cultures (3) 3
*TCHG 518L	Secondary Field Practicum <b>F</b> 1
 <i>120 HOURS</i>	 <i>Field Experience</i>
 <b>PROFESSIONAL YEAR - SPRING</b>	
TCHG 580	Technology for Teachers 1
TCHG 510 OR 511 and 512	Teaching Internship <b>F</b> 8
<b>TOTAL GRADUATE COURSE HOURS</b>	<b>36</b>

**PREREQUISITE CONTENT AND SUPPORT COURSE REQUIREMENTS**

An undergraduate degree in biology is required. Coursework content aligned with the requirements below is required for licensure.

**General Education/Liberal Learning Coursework**

6 Credits	Written Communication Literacy	
PSYC 207 or PSYC 208	Life-span Development or Child Development	3
SOCL 314	Education, Culture and Society and Lab	3
SOCL 314L	Education, Culture and Society Lab <b>F</b>	1
PSYC 312	Educational Psychology	3
CPSC 110	Introduction to Computing	3

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**Major Courses in Biology:**

BIOL 211/211L-212/212L-213/213L	Principles of Biology I, II, III & Lab	12
BIOL 313	Genetics	3
BIOL 407/407L	General Ecology & Lab	4
BIOL 284/284L or BIOL 314/314L or BIOL 409/409L or BIOL 420/420L	Fundamentals of Human Anatomy and Physiology Human Anatomy & Physiology & Lab Comparative Anatomy of Vertebrates & Lab Animal Physiology & Lab	4 4 4 4

**Support Courses required:**

MATH 125	Elementary Statistics	3
CHEM 121/121L-122/122L	General Chemistry I, II & Lab	8
PHYS 151/151L-152/152L	Intermediate Physics & Lab	8

**F** denotes that a class has a required field experience component in public schools.

**COURSE PLAN FOR INITIAL LICENSURE  
ALREADY DEGREEED  
BIOLOGY 6 - 12**

\*Denotes courses that are required for licensure and must be completed prior to the internship.

**GRADUATE COURSE REQUIREMENTS**

<b>PROFESSIONAL YEAR - SUMMER</b>		<b>Credits</b>
*TCHG 516, 517	Curriculum and Instruction	3
*TCHG 543	Classroom Management and Discipline	2
*NSCI 570	Teaching STEM	3
 <b>PROFESSIONAL YEAR - FALL</b>		
*ENGL 522	Content Area Literacy	3
*PSYC 535	Exceptional Learner <b>F</b>	3
*PSYC 544	Assessment of Learning	3
*TCHG 518L	Secondary Field Practicum <b>F</b>	1
<i>120 hours</i>	<i>Field Experience</i>	
 <b>PROFESSIONAL YEAR - SPRING</b>		
TCHG 580	Technology for Teachers	1
TCHG 510 OR 511 and 512	Teaching Internship <b>F</b>	8
<b>TOTAL GRADUATE COURSE HOURS</b>		27

**PREREQUISITE CONTENT AND SUPPORT COURSE REQUIREMENTS**

An undergraduate degree in biology is required. Coursework content aligned with the requirements below is required for licensure.

**General Education/Liberal Learning Coursework**

6 Credits each	Written Communication Literacy	
PSYC 207 or PSYC 208	Life-span Development or Child Development	3
SOCL 314	Education, Culture and Society and Lab	3
SOCL 314L	Education, Culture and Society Lab <b>F</b>	1
PSYC 312	Educational Psychology	3
CPSC 110	Introduction to Computing	3
 <b>Major Courses in Biology:</b>		
BIOL 211/211L-212/212L-213/213L	Principles of Biology I, II, III & Lab	12
BIOL 313	Genetics	3
BIOL 407/407L	General Ecology & Lab	4
BIOL 284/284L or BIOL 314/314L or BIOL 409/409L or BIOL 420/420L	Fundamentals of Human Anatomy and Physiology Human Anatomy & Physiology & Lab Comparative Anatomy of Vertebrates & Lab Animal Physiology & Lab	4 4 4 4
 <b>Support Courses:</b>		
MATH 125	Elementary Statistics	3
CHEM 121/121L-122/122L	General Chemistry I, II & Lab	8
PHYS 151/151L-152/152L	Intermediate Physics & Lab	8

**F** denotes that a class has a required field experience component in public schools.

**COURSE PLAN FOR MAT WITH LICENSURE  
ALREADY DEGREED  
CHEMISTRY 6-12**

\*Denotes courses required for licensure and must be completed prior to the internship.

<b>GRADUATE COURSE REQUIREMENTS</b>	<b>Credits</b>
6 Hours of Graduate CHEM electives (except CHEM 545) and must include ONE course from the following unless taken at the undergraduate level: CHEM 543 Atmospheric Chemistry; or CHEM 565 Environmental Chemistry	6
<b>PROFESSIONAL YEAR - SUMMER</b>	
*NSCI 570                      Teaching STEM	3
*TCHG 516, 517              Curriculum and Instruction I, II	3
*TCHG 543                    Classroom Management and Discipline	2
<b>PROFESSIONAL YEAR - FALL</b>	
*ENGL 522                    Content Area Literacy	3
*PSYC 535                    Exceptional Learner <b>F</b>	3
*PSYC 544                    Assessment of Learning	3
SOCL 501                      Multiculturalism, Diversity and Education or	3
TCHG 550 or	Teaching Across Cultures
*TCHG 518L                  Secondary Field Practicum <b>F</b>	1
<i>120 HOURS</i> <i>Field Experience</i>	
<b>PROFESSIONAL - SPRING</b>	
TCHG 580                      Technology for Teachers	1
TCHG 510 OR 511 and 512    Teaching Internship <b>F</b>	8
<b>TOTAL GRADUATE COURSE HOURS</b>	<b>36</b>

**PREREQUISITE CONTENT AND SUPPORT COURSE REQUIREMENTS**

An undergraduate degree in chemistry is required. Coursework content aligned with the requirements below is required for licensure.

**General Education/Liberal Learning Coursework**

6 Credits	Written Communication Literacy	
PSYC 207 or PSYC 208	Life-span Development or Child Development	3
PSYC 312	Educational Psychology	3
SOCL 314	Education, Culture and Society and Lab	3
SOCL 314L	Education, Culture and Society Lab <b>F</b>	1
MATH 125	Elementary Statistics	3
CPSC 110	Introduction to Computing	3

**Required Chemistry Courses:**

CHEM 121/121L-122/122L	General Chemistry I, II & Lab	8
CHEM 221/221L-222/222L	Organic Chemistry I, II & Lab	8
CHEM 341/342/342L	Physical Chemistry I, II & Lab	7
CHEM 361/361L	Analytical Chemistry & Lab	4
CHEM 401/401L	Inorganic Chemistry & Lab	4
CHEM 445/445L	Instrumental Analysis & Lab	4

**F** denotes that a class has a required field experience component in public schools.

**COURSE PLAN FOR INITIAL LICENSURE  
ALREADY DEGREEED  
CHEMISTRY 6 - 12**

\*Denotes courses required for licensure and must be completed prior to the internship.

<b>GRADUATE COURSE REQUIREMENTS</b>		<b>Credits</b>
<b>PROFESSIONAL YEAR - SUMMER</b>		
NSCI 570	Teaching STEM	3
*TCHG 516, 517	Curriculum and Instruction I, II	3
*TCHG 543	Classroom Management and Discipline	2
<b>PROFESSIONAL YEAR - FALL</b>		
*ENGL 522	Content Area Literacy	3
*PSYC 535	Exceptional Learner <b>F</b>	3
*PSYC 544	Assessment of Learning	3
*TCHG 518L	Secondary Field Practicum <b>F</b>	1
<i>120 HOURS</i>	<i>Field Experience</i>	
<b>PROFESSIONAL YEAR - SPRING</b>		
TCHG 580	Technology for Teachers	1
TCHG 510 OR 511 and 512	Teaching Internship <b>F</b>	8
<b>TOTAL GRADUATE COURSE HOURS</b>		27

**PREREQUISITE CONTENT AND SUPPORT COURSE REQUIREMENTS**

An undergraduate degree in chemistry is required. Coursework content aligned with the requirements below is required for licensure.

**General Education/Liberal Learning Coursework**

6 Credits each	Written Communication Literacy	
PSYC 207 or PSYC 208	Life-span Development or Child Development	3
SOCL 314	Education, Culture and Society and Lab	3
SOCL 314L	Education, Culture and Society Lab <b>F</b>	1
PSYC 312	Educational Psychology	3
MATH 125	Elementary Statistics	3
CPSC 110	Introduction to Computing	3

**Major Courses in Chemistry:**

CHEM 121/121L, 122/122L	General Chemistry I, II & Lab	8
CHEM 221/221L, 222/222L	Organic Chemistry I, II & Lab	8
CHEM 341, 342/342L	Physical Chemistry I, II & Lab	7
CHEM 361/361L	Analytical Chemistry & Lab	5
CHEM 401/401L	Inorganic Chemistry & Lab	5
CHEM 445/445L	Instrumental Analysis & Lab	4

**F** denotes that a class has a required field experience component in public schools.

**COURSE PLAN FOR MAT WITH LICENSURE  
ALREADY DEGREED  
ELEMENTARY PK - 6**

\*Denotes coursework required for licensure and must be completed prior to internship

<b>GRADUATE COURSE REQUIREMENTS:</b>	<b>Credits</b>
MLAN 511                      Advanced Strategies in TESOL <b>F</b>	3
*PSYC 521                      Reading Acquisition & Development	3
*PSYC 521L                      Reading Acquisition & Development Lab <b>F</b>	1
PSYC 544                      Assessment of Learning	3
 <b>PROFESSIONAL YEAR - SUMMER</b>	
*TCHG 516,517                      Curriculum and Instruction I,II <b>F</b>	3
*TCHG 543                      Classroom Management and Discipline	2
*PSYC 535                      Exceptional Learner	3
 <b>PROFESSIONAL YEAR - FALL</b>	
*ENGL 521                      Teaching Writing	3
*MATH 570                      The Study of Mathematics <b>F</b>	3
SOCL 501                      Multiculturalism& Diversity <b>OR</b>	3
TCHG 550                      Teaching Across Cultures	
 <i>120 hours of school experience prior to internship</i>	
 <b>PROFESSIONAL YEAR - SPRING</b>	
TCHG 580                      Technology for Teachers	1
TCHG 510 OR	3
511 and 512                      Teaching Internship Abroad <b>F</b>	8
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<b>TOTAL GRADUATE COURSE HOURS</b>	36

**PREREQUISITE CONTENT AND SUPPORT COURSE REQUIREMENTS**

An undergraduate degree in a Liberal Arts or Science required  
Coursework content aligned with the requirements below is required for licensure.

**General Education/Liberal Learning Coursework**

6 Credits	Written Communication Literacy	
BIOL 107 or 108	General Biology I and II	3
CHEM 103 (or higher)	Introductory Chemistry I	3
PHYS 141 (or higher)	How Things Work	3
BIOL 109L, CHEM 103L, or PHYS 105L	General Biology Laboratory, General Chemistry Lab Elementary Physics Laboratory	1
HIST 121	Early America to the Civil War	3
HIST 122	Modern America: Reconstruction to Global Power	3
PSYC 208	Child Development	3
SOCL 314/SOCL 314L	Education, Culture and Society and Lab <b>F</b>	4
ECON 200 or	Economic Way of Thinking	3
ECON 201 or	Principles of Macroeconomics	
ECON 202	Principles of Microeconomics	

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PSYC 312	Educational Psychology	3
CPSC 110	Introduction to Computing	3
NSCI 310	Natural Science	3
ENGL 316	Children's Literature	3
GEOG 201 or	Introduction to Geography	3
GEOG 210	Intro to Human Geography	3
POLS 101	Power and Politics in America	3

**F** denotes that a class has a required field experience component in public schools.

**COURSE PLAN FOR INITIAL LICENSURE  
ALREADY DEGREED  
ELEMENTARY PK - 6**

\*Denotes coursework required for licensure and must be completed prior to internship.

<b>GRADUATE COURSE REQUIREMENTS</b>	<b>Credits</b>
<b>PROFESSIONAL YEAR - SUMMER</b>	
*TCHG 516, 517                      Curriculum and Instruction I,II <b>F</b>	3
*TCHG 543                              Classroom Management and Discipline	2
*PSYC 535                              Exceptional Learner	3
<b>PROFESSIONAL YEAR - FALL</b>	
*ENGL 521                              Developing Elementary Writers and Readers (fall) <b>F</b>	3
*MATH 570                              The Teaching of Elementary Mathematics (fall) <b>F</b>	3
*PSYC 521                              Reading Acquisition & Development	3
*PSYC 521L                              Reading Acquisition & Development Lab <b>F</b>	1
PSYC 544                                Assessment of Learning	3
 <i>120 hours of school experience prior to internship</i>	
<b>PROFESSIONAL YEAR - SPRING</b>	
TCHG 580                                Technology for Teachers	1
TCHG 510 OR 511 and 512                              Teaching Internship <b>F</b>	8
<b>TOTAL GRADUATE COURSE HOURS</b>	<b>30</b>

**PREREQUISITE CONTENT AND SUPPORT COURSE REQUIREMENTS**

An undergraduate degree in a Liberal Arts or Science is required. Coursework content aligned with the requirements below is required for licensure.

**General Education/Liberal Learning Coursework**

6 Credits	Written Communication Literacy	
BIOL 107 or 108	General Biology I and II	3
CHEM 103 (or higher)	Introductory Chemistry I	3
PHYS 141 (or higher)	How Things Work	3
BIOL 109L or CHEM L	General Biology Laboratory, General Chemistry Lab	1
PHYS 105L	Elementary Physics Laboratory	
HIST 121	Early America to the Civil War	3
HIST 122	Modern America: Reconstruction to Global Power	3
PSYC 208	Child Development	3
SOCL 314/SOCL 314L	Education, Culture and Society and Lab <b>F</b>	4
ECON 200 or	Economic Way of Thinking	3
ECON 201 or	Principles of Macroeconomics	
ECON 202	Principles of Microeconomics	
PSYC 312	Educational Psychology	3
CPSC 110	Introduction to Computing	3
NSCI 310	Natural Science	3
ENGL 316	Children's Literature	3
GEOG 201 or	Introduction to Geography	3
GEOG 210	Intro to Human Geography	3
POLS 101	Power and Politics in America	3

**F** denotes that a class has a required field experience component in public schools.

**COURSE PLAN FOR MAT WITH LICENSURE  
ALREADY DEGREED  
ENGLISH 6 - 12**

\*Denotes coursework required for licensure and must be completed prior to internship.

<b>GRADUATE COURSE REQUIREMENTS</b>		<b>Credits</b>
MLAN 511	Advanced Strategies in TESOL (3) <b>F</b>	3
*ENGL 526	Teaching Writing in Secondary English Classes <b>F</b>	3
*PSYC 544	Assessment of Learning	3
 <b>PROFESSIONAL YEAR - SUMMER</b>		
*TCHG 516, 517	Curriculum and Instruction I, II <b>F</b>	3
*TCHG 543	Classroom Management and Discipline	2
*ENGL 501	Teaching Literature	3
 <b>PROFESSIONAL YEAR - FALL</b>		
*ENGL 522	Content Area Literacy	3
*PSYC 535	Exceptional Learner <b>F</b>	3
SOCL 501 or TCHG 550	Multiculturalism, Diversity and Education or Teaching Across Cultures	3
*TCHG 518L	Secondary Field Practicum <b>F</b>	1
<i>120 HOURS</i>	<i>Field Experience</i>	
 <b>PROFESSIONAL YEAR - SPRING</b>		
TCHG 580	Technology for Teachers	1
TCHG 510 OR 511 and 512	Teaching Internship <b>F</b>	8
<b>TOTAL GRADUATE COURSE HOURS</b>		<b>36</b>

**PREREQUISITE CONTENT AND SUPPORT COURSE REQUIREMENTS**

An undergraduate degree in English is required.

Coursework content aligned with the requirements below is required for licensure.

**General Education/Liberal Learning Coursework**

6 Credits	Written Communication Literacy	
PSYC 207 or PSYC 208	Life-span Development or Child Development	3
SOCL 314 and SOCL 314L	Education, Culture and Society and Lab <b>F</b>	4
PSYC 312	Educational Psychology <b>F</b>	3
CPSC 110	Introduction to Computing	3
ENGL 308	WI: Literature, Theory and Culture	3
ENGL 309	Creative Nonfiction	3
ENGL 315	Adolescent Literature	3
ENGL 421	Shakespeare	3
ENGL 331	The Structure of English	3
ENGL 200	Literacy Foundations I: Ancient through 17th Century	3
ENGL 201	Literacy Foundations II: 18th Century through mid-19th	3
ENGL 202	Literacy Foundations III: Mid-19th Century through 21st	3
3 CREDITS	One (1) Course in World Literature	3
3 CREDITS	One (1) Course in British Literature	3
3 CREDITS	One (1) Course in Film/Media Studies	3
3 CREDITS	One (1) Course in American Literature	3
ENGL 345 or 412	African-American Literature or Multicultural Literature	3
COMM 201 or THEA 232	Public Speaking or Acting I	3

**F** denotes that a class has a required field experience component in public schools.

**COURSE PLAN FOR INITIAL LICENSURE  
ALREADY DEGREED  
ENGLISH 6 - 12**

\*Denotes coursework required for licensure and must be completed prior to internship.

<b>GRADUATE COURSE REQUIREMENTS)</b>	<b>Credits</b>
<b>Elective (select one)</b>	
*ENGL 501 or Teaching Literature (summer) or	3
*ENGL 526 Teaching Writing in Secondary English (fall)	
<b>PROFESSIONAL YEAR - SUMMER</b>	
*TCHG 516, 517 Curriculum and Instruction I, II <b>F</b>	3
*TCHG 543 Classroom Management and Discipline	2
<b>PROFESSIONAL YEAR - FALL</b>	
*ENGL 522 Content Area Literacy	3
*PSYC 544 Assessment of Learning	3
*PSYC 535 Exceptional Learner	3
*TCHG 518L Secondary Field Practicum <b>F</b>	1
<i>120 HOURS</i>	<i>Field Experience</i>
<b>PROFESSIONAL YEAR - SPRING</b>	
TCHG 580 Technology for Teachers	1
TCHG 510 OR 511 and 512 Teaching Internship <b>F</b>	8
<b>TOTAL GRADUATE COURSE HOURS</b>	<b>27</b>

**PREREQUISITE CONTENT AND SUPPORT COURSE REQUIREMENTS**

An undergraduate degree in English is required. Coursework content aligned with the requirements below is required for licensure.

**General Education/Liberal Learning Coursework**

6 Credits	Written Communication Literacy	6
PSYC 207 or PSYC 208	Life-span Development or Child Development	3
SOCL 314 and SOCL 314L	Education, Culture and Society and Lab <b>F</b>	4
PSYC 312	Educational Psychology <b>F</b>	3
CPSC 110	Introduction to Computing	3
ENGL 308	WI: Literature, Theory, and Culture	3
ENGL 309	WI: Creative Nonfiction	3
ENGL 315	Adolescent Literature	3
ENGL 421	Shakespeare	3
ENGL 331	The Structure of English	3
ENGL 200	Literacy Foundations I: Ancient through 17th Century	3
ENGL 201	Literacy Foundations II: 18th Century through mid-19th	3
ENGL 202	Literacy Foundations III: Mid-19th Century through 21st	3
3 CREDITS	One (1) Course in World Literature	3
3 CREDITS	One (1) Course in Film/Media Studies	3
3 CREDITS	One (1) Course in American Literature	3
3 CREDITS	One (1) Course in British Literature	3
ENGL 345 or 410	African-American Literature or Multicultural Literature	3
COMM 201 OR THEA 232	Public Speaking or Acting I	3

**F** denotes that a class has a required field experience component in public schools.

**COURSE PLAN FOR MAT WITH LICENSURE  
ALREADY DEGREED  
ENGLISH AS A SECOND LANGUAGE (ESL) PK-12**

\*Denotes courses required for licensure and must be completed prior to the internship.

<b>GRADUATE COURSE REQUIREMENTS</b>		<b>Credits</b>
*MLAN 511	Advanced Strategies in TESOL <b>F</b>	3
*PSYC 535	Exceptional Learner <b>F</b>	3
*MLAN 570	Teaching Modern Languages	3
 <b>PROFESSIONAL YEAR - SUMMER</b>		
*PSYC 544	Assessment of Learning	3
*TCHG 516, 517	Curriculum and Instruction I, II	3
*TCHG 543	Classroom Management and Discipline	2
 <b>PROFESSIONAL YEAR - FALL</b>		
*ENGL 521 or ENGL 526	Developing Elementary Writers & Readers Teaching Writing in Secondary English Classes	3
*ENGL 522	Content Area Literacy	3
*PSYC 521	Reading Acquisition & Development	3
*PSYC 521L	Reading Acquisition & Development Lab <b>F</b>	1
<i>120 HOURS</i>	<i>Field Experience</i>	
 <b>PROFESSIONAL YEAR - SPRING</b>		
TCHG 580	Technology for Teachers	1
TCHG 510 OR 511 and 512	Teaching Internship <b>F</b>	8
<b>TOTAL GRADUATE COURSE HOURS</b>		36

**PREREQUISITE CONTENT AND SUPPORT COURSE REQUIREMENTS**

Major: Any liberal arts major (English or Psychology recommended) with general education courses in English, Mathematics, Social Studies, Science

Appropriate substituted courses should be documented

**General Education/Liberal Learning Coursework**

6 Credits each                      Written Communication Literacy and Mathematics Literacy

PSYC 207 or PSYC 208	Life-span Development or Child Development	3
SOCL 314	Education, Culture and Society and Lab	3
SOCL 314L	Education, Culture and Society Lab <b>F</b>	1
PSYC 312	Educational Psychology	3
CPSC 110	Introduction to Computing	3
ENGL 310	Introduction to Linguistics	3
ENGL 430	The Structure of English	3
SOCL 330 or MLAN 308	Language and Culture or Cross-cultural Understanding	3
MLAN 311	Teaching English to Speakers of Other Languages (TESOL)	3
Foreign Language through 202	(Spanish recommended)	

**F** denotes that a class has a required field experience component in public schools.

**COURSE PLAN FOR INITIAL LICENSURE  
ALREADY DEGREED  
ENGLISH AS A SECOND LANGUAGE (ESL) PK-12**

\*Denotes coursework required for licensure and must be completed prior to internship.

<b>GRADUATE COURSE REQUIREMENTS</b>	<b>Credits</b>
<b>PROFESSIONAL YEAR - SUMMER</b>	
*PSYC 535                      Exceptional Learner <b>F</b>	3
*TCHG 516, 517              Curriculum and Instruction I, II	3
*TCHG 543                      Classroom Management and Discipline	2
<b>PROFESSIONAL YEAR - FALL</b>	
*ENGL 521 or                      Developing Elementary Writers and Readers or	3
*ENGL 526                      Teaching Writing the Secondary Classes	
*ENGL 522                      Content Area Literacy	3
*PSYC 521                      Reading Acquisition and Development	3
*PSYC 521L                      Reading Acquisition and Development Lab <b>F</b>	1
*MLAN 511                      Advanced Strategies in TESOL <b>F</b>	<b>3</b>
<i>120 HOURS</i> <i>Field Experience</i>	
<b>PROFESSIONAL YEAR - SPRING</b>	
PSYC 544                      Assessment of Learning	3
TCHG 580                      Technology for Teachers	1
TCHG 510 OR 511 and 512      Teaching Internship <b>F</b>	8
<b>TOTAL GRADUATE COURSE HOURS</b>	<b>33</b>

**PREREQUISITE CONTENT AND SUPPORT COURSE REQUIREMENTS**

Major: Any liberal arts major (English or Psychology recommended) with general education courses in English, Mathematics, Social Studies, Science

Coursework content aligned with the requirements below is required for licensure.

**General Education/Liberal Learning Coursework**

6 Credits	Written Communication Literacy	
PSYC 207 or PSYC 208	Life-span Development or Child Development	3
SOCL 314	Education, Culture and Society and Lab	3
SOCL 314L	Education, Culture and Society Lab <b>F</b>	1
PSYC 312	Educational Psychology	3
CPSC 110	Introduction to Computing	3
ENGL 310	Introduction to Linguistics	3
SOCL 330 or	Language and Culture or	3
MLAN 308	Cross-cultural Understanding	
ENGL 331	The Structure of English	3
MLAN 311	Teaching English to Speakers of Other Languages (TESOL)	3
LANG through 202	(Spanish recommended)	6-12

**F** denotes that a class has a required field experience component in public schools.

**COURSE PLAN FOR MAT WITH LICENSURE  
ALREADY DEGREED  
HISTORY & SOCIAL SCIENCE 6 - 12**

\*Denotes coursework required for licensure and must be completed prior to internship.

<b>GRADUATE COURSE REQUIREMENTS</b>	<b>Credits</b>
HIST _____ 510/530 History	3
HIST _____ 510/530 History	3
 <b>PROFESSIONAL YEAR: SUMMER</b>	
*TCHG 516-517 Curriculum and Instruction I, II	3
*TCHG 543 Classroom Management and Discipline	2
GEOG 570 World Geography for Teachers	3
 <b>PROFESSIONAL YEAR - FALL</b>	
*ENGL 522 Content Area Literacy	3
*HIST/ POLS 570 Methods for Teaching and Assessing Social Studies	3
*PSYC 535 Exceptional Learner <b>F</b>	3
SOCL 501 or TCHG 550 Multiculturalism, Diversity and Education or Teaching Across Cultures <b>F</b>	3
*TCHG 518L Secondary Field Practicum <b>F</b>	1
 <i>120 hours of school experience prior to internship</i>	
 <b>PROFESSIONAL YEAR - SPRING</b>	
TCHG 580 Technology for Teachers	1
TCHG 510 OR 511 and 512 Teaching Internship <b>F</b>	8
<b>TOTAL GRADUATE COURSE HOURS</b>	<b>36</b>

**PREREQUISITE CONTENT AND SUPPORT COURSE REQUIREMENTS**

An undergraduate degree in History, Government, or American Studies is required. Coursework content aligned with the requirements below is required for licensure.

**General Education/Liberal Learning Coursework**

6 Credits	Written Communication Literacy	
PSYC 207 or PSYC 208	Life-span Development or Child Development	3
SOCL 314	Education, Culture and Society and Lab	3
SOCL 314L	Education, Culture and Society Lab <b>F</b>	1
PSYC 312	Educational Psychology	3
CPSC 110	Introduction to Computing	3
HIST 111-112G	The Ancient and Medieval World-The Modern World	6
HIST 121-122	Early America to the Civil War-Modern America	6
HIST 300	WI: Historical Methods and Historiography	3
ECON 201 or ECON 202	Macroeconomics Microeconomics (201 preferred)	3
GEOG 201-202 or GEOG 210-211	Introduction to Geography I - II Introduction to Human Geography & Geography of Human/Environment Interaction	6
POLS 100 or POLS 101	Political Thought & Society or Power and Politics in America	3
POLS 202	State and Local Government	3
POLS 215	International and Comparative Politics	3

**F** denotes that a class has a required field experience component in public schools.

**COURSE PLAN FOR INITIAL LICENSURE  
ALREADY DEGREED  
HISTORY & SOCIAL SCIENCE 6 - 12**

\*Denotes coursework required for licensure and must be completed prior to internship.

<b>GRADUATE COURSE REQUIREMENTS</b>	<b>Credits</b>
<b>PROFESSIONAL YEAR - SUMMER</b>	
*TCHG 516-517 Curriculum and Instruction m/s	3
*TCHG 543 Classroom Management and Discipline	2
*GEOG 570 World Geography for Teachers	3
<b>PROFESSIONAL YEAR - FALL</b>	
*ENGL 522 Content Area Literacy	3
*PSYC 535 Exceptional Learner	3
*HIST 570 Methods for Teaching Social Studies	3
*TCHG 518L Secondary/PK-12 Field Practicum <b>F</b>	1
<i>120 hours</i>	<i>Field Experience</i>
<b>PROFESSIONAL YEAR - SPRING</b>	
TCHG 580 Technology for Teachers	1
TCHG 510 or 511 and 512 Teaching Internship <b>F</b>	8
<b>TOTAL GRADUATE COURSE HOURS</b>	<b>27</b>

**PREREQUISITE CONTENT AND SUPPORT COURSE REQUIREMENTS**

An undergraduate degree in History, Government, or American Studies is required. Coursework content aligned with the requirements below is required for licensure.

General Education/Liberal Learning Coursework

6 Credits	Written Communication Literacy	
PSYC 207 or PSYC 208	Life-span Development or Child Development	3
SOCL 314	Education, Culture and Society and Lab	3
SOCL 314L	Education, Culture and Society Lab <b>F</b>	1
PSYC 312	Educational Psychology	3
CPSC 110	Introduction to Computing	3
HIST 111-112G	The Ancient and Medieval World-The Modern World	6
HIST 121-122	Early America to the Civil War-Modern America	6
HIST 300	WI: Historical Methods and Historiography	3
ECON 201 or ECON 202	Macroeconomics or Microeconomics (201 preferred)	3
GEOG 201-202 or GEOG 210-211	Introduction to Geography I - II Introduction to Human Geography & Geography of Human/Environment Interaction	6
POLS 100 or POLS 101	Political Thought & Society or Power and Politics in America	3
POLS 202	State and Local Government	3
POLS 215	International and Comparative Politics	3

**F** denotes that a class has a required field experience component in public schools.

**COURSE PLAN FOR MAT WITH LICENSURE  
ALREADY DEGREED  
MATHEMATICS 6 - 12**

\*Denotes courses required for licensure and must be completed prior to the internship.

<b>GRADUATE COURSE REQUIREMENTS</b>		<b>Credits</b>
MATH 538	Apprenticeship in Teaching Mathematics <b>F</b>	3
*MATH 555	Pedagogy, Assessment and Research for the Sec Math Teacher	3
*PSYC 544	Assessment of Learning	3
<b>PROFESSIONAL YEAR - SUMMER</b>		
*TCHG 516, 517	Curriculum and Instruction I, II	3
*TCHG 543	Classroom Management and Discipline	2
*NSCI 570	Teaching STEM	3
<b>PROFESSIONAL YEAR - FALL</b>		
*ENGL 522	Content Area Literacy	3
*PSYC 535	Exceptional Learner <b>F</b>	3
SOCL 501 or TCHG 550	Multiculturalism, Diversity and Education or Teaching Across Cultures <b>F</b>	3
*TCHG 518L	Secondary Field Practicum <b>F</b>	1
<i>120 HOURS</i>	<i>Field Experience</i>	
<b>PROFESSIONAL YEAR - SPRING</b>		
TCHG 580	Technology for Teachers	1
TCHG 510 OR 511 and 512	Teaching Internship <b>F</b>	8
<b>TOTAL GRADUATE COURSE HOURS</b>		36

**PREREQUISITE CONTENT AND SUPPORT COURSE REQUIREMENTS**

Student must have B.A./B.S. in mathematics Coursework content aligned with the requirements below is required for licensure.

**General Education/Liberal Learning Coursework**

6 Credits	Written Communication Literacy	
PSYC 207 or PSYC 208	Life-span Development or Child Development	3
SOCL 314	Education, Culture and Society and Lab	3
SOCL 314L	Education, Culture and Society Lab <b>F</b>	1
PSYC 312	Educational Psychology	3
CPSC 110	Introduction to Computing	3
MATH 125	Elementary Statistics	3
MATH 140	Calculus and Analytic Geometry	4
MATH 245	Proofs and Discrete Mathematics	3
MATH 250	Multivariable Calculus	3
MATH 260	Linear Algebra	3
MATH 360	Real Analysis I	3
MATH 370	Modern Algebra I	3
MATH 378	Elem Geometry from an Adv Viewpoint	3

**F** denotes that a class has a required field experience component in public schools.

**COURSE PLAN FOR INITIAL LICENSURE  
ALREADY DEGREED  
MATHEMATICS 6 - 12**

\*Denotes coursework required for licensure and must be completed prior to internship.

<b>GRADUATE COURSE REQUIREMENTS</b>	<b>Credits</b>
<b>PROFESSIONAL YEAR - SUMMER</b>	
*TCHG 516, 517                      Curriculum and Instruction I, II	3
*TCHG 543                              Classroom Management and Discipline	2
*NSCI 570                                Teaching STEM	3
<b>PROFESSIONAL YEAR - FALL</b>	
*ENGL 522                                Content Area Literacy <b>F</b>	3
*PSYC 535                                Exceptional Learner	3
*PSYC 544                                Assessment of Learning	3
*TCHG 518L                                Secondary Field Practicum <b>F</b>	1
<i>120 HOURS</i> <i>Field Experience</i>	
<b>PROFESSIONAL YEAR - SPRING</b>	
*MATH 555                                Pedagogy, Assessment and Research for Sec Math Teacher	3
TCHG 580                                 Technology for Teachers	1
TCHG 510 OR 511 and 512              Teaching Internship <b>F</b>	8
<b>TOTAL GRADUATE COURSE HOURS</b>	<b>30</b>

**PREREQUISITE CONTENT AND SUPPORT COURSE REQUIREMENTS**

Student must have B.A./B.S. in mathematics. Coursework content aligned with the requirements below is required for licensure.

**General Education/Liberal Learning Coursework**

6 Credits	Written Communication Literacy	
PSYC 207 or PSYC 208	Life-span Development or Child Development	3
SOCL 314	Education, Culture and Society and Lab	3
SOCL 314L	Education, Culture and Society Lab <b>F</b>	1
PSYC 312	Educational Psychology	3
CPSC 110	Introduction to Computing	3
MATH 125	Elementary Statistics	3
MATH 140	Calculus and Analytic Geometry	4
MATH 250	Multivariable Calculus	3
MATH 245	Proofs and Discrete Mathematics	3
MATH 260	Linear Algebra	3
MATH 360	Real Analysis I	3
MATH 370	Modern Algebra I	3

**F** denotes that a class has a required field experience component in public schools.

**COURSE PLAN FOR MAT WITH LICENSURE  
ALREADY DEGREED  
PHYSICS 6 - 12**

\*Denotes courses required for licensure and must be completed prior to the internship.

<b>GRADUATE COURSE REQUIREMENTS</b>	<b>Credits</b>
<b>Choose two of the following:</b>	
PHYS 501                      Models of Dynamical Systems (3)	6
PHYS 502                      Quantum Physics (3)	
PHYS 504                      Electromagnetic Theory (3)	
<b>PROFESSIONAL YEAR - SUMMER</b>	
*NSCI 570                      Teaching STEM	3
*TCHG 516, 517                Curriculum and Instruction I, II	3
*TCHG 543                      Classroom Management and Discipline	2
<b>PROFESSIONAL YEAR - FALL</b>	
*ENGL 522                      Content Area Literacy	3
*PSYC 535                      Exceptional Learner <b>F</b>	3
*PSYC 544                      Assessment of Learning	3
*TCHG 518L                    Secondary Field Practicum <b>F</b>	1
SOCL 501 or TCHG 550 <i>120 HOURS</i>	3  <i>Field Experience</i>
<b>PROFESSIONAL YEAR - SPRING</b>	
TCHG 580                      Technology for Teachers	1
TCHG 510 OR 511 and 512    Teaching Internship <b>F</b>	8
<b>TOTAL GRADUATE COURSE HOURS</b>	<b>36</b>

**PREREQUISITE CONTENT AND SUPPORT COURSE REQUIREMENTS**

Student must have B.A./B.S. in physics. Coursework content aligned with the requirements below is required for licensure.

**General Education/Liberal Learning Coursework**

6 Credits each                Written Communication Literacy	
PSYC 207 or PSYC 208        Life-span Development or Child Development	3
SOCL 314                        Education, Culture and Society and Lab	3
SOCL 314L                      Education, Culture and Society Lab <b>F</b>	1
PSYC 312                        Educational Psychology	3
CPSC 110                        Introduction to Computing	3
MATH 125                        Elementary Statistics	3

**Support Courses:**

MATH 140                        Calculus and Analytic Geometry	4
MATH 240                        Intermediate Calculus	3
MATH 250                        Multivariable Calculus	3
MATH 320                        Ordinary Differential Equations	3
PHYS 201/201L-202/202L      General Physics & Lab	8
PHYS 303                        General Physics	3
PHYS 341                        Design and Analysis of Experiments	3
PHYS 351                        Modern Physics	3
PHYS 402                        Quantum Physics	3
ENGR 211/211L                Intro. to Electric Circuits & Electronics, & Lab	4
ENGR 212/212L                Electronics and Electronics Lab	4

**F** denotes that a class has a required field experience component in public schools.

**COURSE PLAN FOR INITIAL LICENSURE  
ALREADY DEGREED  
PHYSICS 6 - 12**

\*Denotes coursework required for licensure and must be completed prior to internship.

<b>GRADUATE COURSE REQUIREMENTS</b>		<b>Credits</b>
<b>PROFESSIONAL YEAR - SUMMER</b>		
*NSCI 570	Teaching STEM	3
*TCHG 516, 517	Curriculum and Instruction I, II	3
*TCHG 543	Classroom Management and Discipline	2
<b>PROFESSIONAL YEAR - FALL</b>		
*ENGL 522	Content Area Literacy	3
*PSYC 535	Exceptional Learner <b>F</b>	3
*PSYC 544	Assessment of Learning	3
*TCHG 518L	Secondary Field Practicum <b>F</b>	1
<i>120 HOURS</i>	<i>Field Experience</i>	
<b>PROFESSIONAL YEAR - SPRING</b>		
TCHG 580	Technology for Teachers	1
TCHG 510 OR 511 and 512	Teaching Internship <b>F</b>	8
<b>TOTAL GRADUATE COURSE HOURS</b>		27

**PREREQUISITE CONTENT AND SUPPORT COURSE REQUIREMENTS**

Student must have a B.A. or B.S. in Physics. Coursework content aligned with the requirements below is required for licensure.

**General Education/Liberal Learning Coursework**

6 Credits	Written Communication Literacy	
PSYC 207 or PSYC 208	Life-span Development or Child Development	3
SOCL 314	Education, Culture and Society and Lab	3
SOCL 314L	Education, Culture and Society Lab <b>F</b>	1
PSYC 312	Educational Psychology	3
CPSC 110	Introduction to Computing	3
MATH 140	Calculus	4
PHYS 201/201L-202/202L	General Physics & Lab	8
MATH 240-250	Intermediate Calculus-Multivariable Calculus	6
MATH 320	Ordinary Differential Equations	3
ENGR 211/211L	Intro. to Electric Circuits & Electronics, & Lab	4
PHYS 303	General Physics	3
PHYS 341	Design and Analysis of Experiments	3
PHYS 351	Modern Physics	3
PHYS 402	Quantum Physics	3
ENGR 212/212L	Electronics and Electronics Lab	4

**F** denotes that a class has a required field experience component in public schools.

**COURSE PLAN FOR MAT WITH LICENSURE  
ALREADY DEGREED  
SPANISH PK - 12**

\*Denotes coursework required for licensure and must be completed prior to internship.

<b>GRADUATE COURSE REQUIREMENTS</b>	<b>Credits</b>
MLAN 511                      Advanced Strategies in TESOL <b>F</b>	3
*MLAN 570                    Teaching Modern Language	3
*PSYC 544                    Assessment of Learning	3
<b>PROFESSIONAL YEAR - SUMMER</b>	
*PSYC 535                    Exceptional Learner <b>F</b>	3
*TCHG 516, 517              Curriculum and Instruction I, II	3
*TCHG 543                    Classroom Management and Discipline	2
<b>PROFESSIONAL YEAR - FALL</b>	
*ENGL 522                    Content Area Literacy	3
SOCL 501 or TCHG 550                    Multiculturalism, Diversity and Education or Teaching Across Cultures <b>F</b>	3
*SPAN 538                    Apprenticeship in Teaching Spanish <b>F</b>	3
*TCHG 518L                  Secondary Field Practicum <b>F</b>	1
<i>120 HOURS</i> <i>Field Experience</i>	
<b>PROFESSIONAL YEAR - SPRING</b>	
TCHG 580                    Technology for Teachers	1
TCHG 510 OR 511 and 512    Teaching Internship <b>F</b>	8
<b>TOTAL GRADUATE COURSE HOURS</b>	<b>36</b>

**PREREQUISITE CONTENT AND SUPPORT COURSE REQUIREMENTS**

An undergraduate degree in Spanish is required. Coursework content aligned with the requirements below is required for licensure.

**General Education/Liberal Learning Coursework**

6 Credits each                      Written Communication Literacy	
PSYC 207 or PSYC 208              Life-span Development or Child Development	3
SOCL 314                              Education, Culture and Society and Lab	3
SOCL 314L                            Education, Culture and Society Lab <b>F</b>	1
PSYC 312                              Educational Psychology	3
CPSC 110                              Introduction to Computing	3

**Choose one of the following:** **3**

MLAN 203                              International Folktales in English Translation	
MLAN 205                              The Novel in English Translation	
MLAN 206                              The Drama in English Translation	
MLAN 207                              International Cinema	

**Required:**

MLAN 308                              Cross-Cultural Awareness	3
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**One of the following:** **3**

SPAN 301                              Grammar and Composition	
SPAN 303                              Advanced Grammar and Composition	

(continued on next page)

<b>One of the following:</b>		<b>3</b>
SPAN 302	Advanced Spanish Conversation	
SPAN 308	Conversation via Cinema	
<b>One of the following:</b>		<b>3</b>
SPAN 351	Introduction to Latin-American Literature I	
SPAN 352	Introduction to Latin-American Literature II	
SPAN 353	Introduction to Spanish Literature I	
SPAN 354	Introduction to Spanish Literature II	
<b>One of the following:</b>		<b>3</b>
SPAN 471	Hispanic Visual Culture and the Arts	
SPAN 472	Hispanic Popular Culture	
SPAN 473	Hispanic Literature and Social Issues	

**F** denotes that a class has a required field experience component in public schools.

**COURSE PLAN FOR INITIAL LICENSURE  
ALREADY DEGREED  
SPANISH PK - 12**

\*Denotes coursework required for licensure and must be completed prior to internship.

<b>GRADUATE COURSE REQUIREMENTS</b>	<b>Credits</b>
<b>PROFESSIONAL YEAR - SUMMER</b>	
*PSYC 535                      Exceptional Learner <b>F</b>	3
*TCHG 516, 517              Curriculum and Instruction I, II	3
*TCHG 543                      Classroom Management and Discipline	2
<b>PROFESSIONAL YEAR - FALL</b>	
*MLAN 570                      Teaching Modern Languages	3
*ENGL 522                      Content Area Literacy	3
*PSYC 544                      Assessment of Learning	3
*SPAN 538                      Apprenticeship in Teaching Spanish	3
*TCHG 518L                    Secondary Field Practicum <b>F</b>	1
<i>120 HOURS</i> <i>Field Experience</i>	
<b>PROFESSIONAL YEAR - SPRING</b>	
TCHG 580                      Technology for Teachers	1
TCHG 510 OR 511 and 512    Teaching Internship <b>F</b>	8
<b>TOTAL GRADUATE COURSE HOURS</b>	<b>30</b>

**PREREQUISITE CONTENT AND SUPPORT COURSE REQUIREMENTS**

Student must have a degree in Spanish. Coursework content aligned with the requirements below is required for licensure.

**General Education/Liberal Learning Coursework**

6 Credits                      Written Communication Literacy	
PSYC 207 or PSYC 208        Life-span Development or Child Development	3
SOCL 314                      Education, Culture and Society and Lab	3
SOCL 314L                      Education, Culture and Society Lab <b>F</b>	1
PSYC 312                      Educational Psychology	3
CPSC 110                      Introduction to Computing	3

**One of the following:** **3**

MLAN 203                      International Folktales in English Translation	
MLAN 205                      The Novel in English Translation	
MLAN 206                      The Drama in English Translation	
MLAN 207                      International Cinema	

**Required:**

MLAN 308                      Cross-Cultural Awareness	3
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**One of the following:** **3**

SPAN 301                      Grammar and Composition	
SPAN 303                      Advanced Grammar and Composition	

**One of the following:** **3**

SPAN 302                      Advanced Spanish Conversation	
SPAN 308                      Conversation via Cinema	

(continued on the next page)

**Two of the following:****6**

SPAN 351	Introduction to Latin-American Literature I
SPAN 352	Introduction to Latin-American Literature II
SPAN 353	Introduction to Spanish Literature I
SPAN 354	Introduction to Spanish Literature II

**One of the following:****3**

SPAN 471	Hispanic Visual Culture and the Arts
SPAN 472	Hispanic Popular Culture
SPAN 473	Hispanic Literature and Social Issues

**F** denotes that a class has a required field experience component in public schools.

**MASTER OF FINANCIAL ANALYSIS**  
**Dr. Susan Ji, Graduate Program Director**  
**Luter Hall 125**  
**susan.ji@cnu.edu (757) 594-7075**

The Master of Financial Analysis degree (MFinA) program is designed to prepare students for careers in accounting firms, investment and wealth management firms, financial institutions, and corporation, that require a deep understanding of data analytics and new technologies. Equipped with advanced knowledge of accounting, finance, data analytics software such as Python and Tableau, and new technologies such as artificial intelligence and blockchain and their application to analyze and communicate complex financial information, graduates of the program will be able to command higher salaries and quicker advancement than their counterparts in Master of Accountancy, Master of Finance, and Master of Business Administration programs.

The program will prepare students to sit for the certifications required for advancement in investment firms, wealth management firms, financial institutions, CPA firms and other business enterprises. These certifications include the Chartered Financial Analyst (CFA), the Certified Financial Planner (CFP) and the Certified Public Accountant (CPA).

### **Admission Requirements for Degree-Seeking Students**

All students are required to meet the admission requirements of the University. Admission to the Master of Financial Analysis program also requires the following:

1. A baccalaureate degree in a business field from an institutionally accredited college or university with a minimum grade point average of 3.00 on a 4.00 scale. *All applicants need to have completed the following courses: Intermediate Accounting, Tax Fundamentals, Corporate Finance, Principles of Investment, and Microeconomics prior to starting the program. Non-business applicants may be required to complete additional coursework.*
2. An official transcript from the baccalaureate institution with the degree posted, and official transcripts for all graduate work taken at other institutions.
3. A personal statement of no more than two pages long as to the reasons for applying to the program.
4. Two letters of recommendation: one from a faculty member and one from either a faculty member or employer.
5. Scores on the GMAT if not waived. GMAT is waived for students with an undergraduate cumulative GPA of 3.25
6. Work experience or internship, preferably in accounting or finance.
7. A Skype or face-to-face interview before a final admission decision is made may be required.

Transfer credits from an accredited graduate program will be permitted for up to 6 credits of elective courses.

### **Academic Policy for Non-degree Students**

Non-degree students are limited to 12 credit hours of graduate study. Up to 12 credit hours of graduate study may be transferred to the graduate degree program should a non-degree student apply and be accepted to a degree program. Should a non-degree student desire additional courses beyond the 12-credit hour limit, they may petition the Graduate Program Director for a waiver of this limit. Before enrolling in any graduate course a non-degree student must obtain consent of the instructor. The instructor will determine whether the student has the academic background and the prerequisites for the specific course. Admission requirements for non-degree students are found on page 14 of this catalog.

### **Change from Non-degree Status to Degree-seeking Status**

A non-degree student may apply to change to degree-seeking status if they:

- have completed 12 credit hours of CNU graduate courses with a cumulative 3.0 GPA or higher,
- have a status of Good Academic Standing, and
- have submitted scores from the GMAT.

To apply, submit the Request for Change to Degree-seeking Status form to Graduate Admission along with the documentation listed in 'Admission Requirements for Degree-seeking Students' shown on page 14.

**Academic Prerequisites**

In addition to the courses listed in Admission requirements, applicants should have intermediate Excel skills.

**Transfer Credits:**

A maximum of 6 credits taken while the student was in an undergraduate status may be transferred to the graduate transcript..

**Curriculum**

The Master of Financial Analysis degree program is a 30-credit hour, non-thesis program, detailed below under Program of Study. As a part of the capstone course, FINC 591 Integrated Financial Analysis and Strategy, teams of students will complete a project in their area of professional interest requiring both independent research and analysis of data obtained from a local partner firm. Examples of the project include developing a data analytics model, a comprehensive financial plan, or an audit plan. The capstone project will be graded on a pass/fail basis. Passing the project is a requirement for passing the capstone course. If a student fails all or a portion of the capstone project, the student will be allowed to resubmit the failed portion or the project. A second failure will result in dismissal from the degree program.

**Graduation Requirements**

- Successful completion of 30 credit hours of the Master of Financial Analysis degree program coursework;
- An overall graduate grade point average of 3.00 in all CNU courses submitted for graduate credit;
- Successful completion of the capstone project as part of the capstone course.

**Graduate Assistantships**

See page 33 of the catalog for special terms, criteria and procedures. Applications are available on the program's website.

**For Further Information:**

Contact the MFinA Graduate Program Director, Dr. Susan Ji, by email at [susan.ji@cnu.edu](mailto:susan.ji@cnu.edu) or (757) 594-7075.

**MASTER OF FINANCIAL ANALYSIS  
PROGRAM OF STUDY  
30 CREDITS**

**Core Courses (18 credits)**

- ACCT 500 / FINC 500 Advanced Financial Statement Analysis (3)
- FINC 524 Modern Portfolio Management: Performance Evaluation and Benchmarking (3)
- FINC 532 Behavioral Finance and Professional Relationships (3)
- ACCT 552 / FINC 552 Financial Regulation and Professional Responsibilities (3)
- ACCT 570 / FINC 570 Data Management and Analytics (3)
- FINC 591 Integrated Financial Analysis and Strategy (3)

**Elective Courses (12 credits). Choose from:**

- ACCT 502 Advanced Tax Planning and Tax Research (3)
- ACCT 505 Emerging Assurance Technologies (3)
- ACCT 561 International Accounting & Finance (3)
- FINC 522 Advanced Corporate Finance (3)
- FINC 525 Wealth Management, Financial Planning and Personal Hedging Strategy (3)
- FINC 544 Advanced Derivatives Analysis (3)
- FINC 562 Entrepreneurial Finance (3)
- ACCT 572 / FINC 572 Cybersecurity for Accounting and Finance Professionals (3)
- ACCT 595 / FINC 595 Advanced Topics (1-3)
- ACCT 599 / FINC 599 Independent Study (1-3)

**Total for MFinA 30 credit hours**

Students may choose elective courses that will best prepare them for certification exams. The following electives are recommended:

**Elective Courses CFA (12 credits). Choose from:**

- ACCT 561 International Accounting & Finance (3)
- FINC 522 Advanced Corporate Finance (3)
- FINC 525 Wealth Management, Financial Planning and Personal Hedging Strategy (3)
- FINC 544 Advanced Derivatives Analysis (3)
- FINC 562 Entrepreneurial Finance (3)

**Elective Courses CFP (12 credits). Choose from:**

- ACCT 502 Advanced Tax Planning and Tax Research (3)
- ACCT 561 International Accounting & Finance (3)
- FINC 525 Wealth Management, Financial Planning and Personal Hedging Strategy (3)
- FINC 562 Entrepreneurial Finance (3)
- ACCT 572 / FINC 572 Cybersecurity for Accounting and Finance Professionals (3)

**Elective Courses CPA (12 credits). Choose from:**

- ACCT 502 Advanced Tax Planning and Tax Research (3)
- ACCT 505 Emerging Assurance Technologies (3)
- ACCT 561 International Accounting & Finance (3)
- FINC 562 Entrepreneurial Finance (3)
- ACCT 572 / FINC 572 Cybersecurity for Accounting and Finance Professionals (3)

**MASTER OF SCIENCE  
IN APPLIED PHYSICS AND COMPUTER SCIENCE  
Dr. Peter Monaghan, Graduate Program Director  
Luter Hall 302  
peter.monaghan@cnu.edu (757) 594-8293**

The Master of Science in Applied Physics and Computer Science is built around a core of physics and computer science courses that are the foundation of the three areas of concentration: computer science, computer systems engineering and instrumentation, and applied physics. The CNU master's program offers students with a bachelor's degree a significant step in their maturing as scientists. Given the interdisciplinary nature of the department, the thesis opportunities are exceptionally varied, including software and/or hardware projects drawn from faculty research areas including: nuclear physics, gravitational waves, space science, cyber security, cryptography, human-machine interfaces, robotics, machine learning, virtual and augmented reality, data analysis, visualization, science education and software engineering. Some research is conducted offsite at national facilities including the NASA Langley Research Center and the Thomas Jefferson National Accelerator Facility.

### Concentration Areas

**M.S. - APCS applicants select a concentration from one of the following:**

- Applied Physics
- Computer Systems Engineering and Instrumentation
- Computer Science

Each concentration offers a thesis or non-thesis program.

### Admission Requirements for Degree-Seeking Students

1. A baccalaureate degree from an institutionally accredited college or university with a minimum grade point average of 3.00 on a 4.00 scale.
2. An official transcript from the baccalaureate institution with the degree posted, and official transcripts for all graduate work taken at other institutions.
3. Three letters of recommendation from people who can attest that the applicant is likely to be able to be successful in graduate-level academic work.
4. Scores from the Graduate Record Examination (GRE) General Test taken within five years prior to the date of admission. A GRE score of at least 295 for Verbal and Quantitative sections combined is required. For those applicants already holding a master's degree, the GRE may be waived by permission of the Associate Provost for Research and Dean of Graduate Studies. A letter to the Associate Provost for Research and Dean of Graduate Studies requesting a waiver is required.

The Master of Science in Applied Physics and Computer Science is designed to serve students with a baccalaureate degree in applied physics, computer science, electrical and/or computer engineering or mathematics. Students with degrees in other areas are encouraged to apply. Departmental graduate advisors will establish the background courses needed for such students.

### Academic Policy for Non-Degree Students

Non-degree students are limited to 12 hours of graduate study. Up to 12 credits of graduate study may be applied to the graduate degree should a non-degree student apply and be accepted to degree-seeking status. Should a non-degree student desire additional courses beyond the 12-credit limit, they may petition the Graduate Program Director for a waiver of this limit. Before enrolling in any graduate course a non-degree student must obtain consent of the instructor. The instructor will determine whether the student has the academic background prerequisites for the specific course. Admission requirements for non-degree students are found on page 15 of this catalog.

### Changing from Non-degree Status to Degree-seeking Status

A non-degree student may apply to change to degree-seeking status if they:

- have completed 12 hours of CNU graduate courses with a cumulative 3.0 GPA or higher,
- have a status of Good Academic Standing, and
- have submitted passing scores from the Graduate Record Exam.

To apply, submit the *Request for Change to Degree-seeking Status* form to Graduate Admission along with the documen-

tation listed in 'Admission Requirements for Degree-seeking Students' shown on page 14.

### Academic Prerequisites

See each concentration for the specific academic prerequisites. An accelerated schedule of undergraduate prerequisites can be arranged for applicants whose qualifications do not entirely satisfy the prerequisites for graduate study. Good computer programming skills are critical to a student's success in many of the courses, especially those courses with the CPSC prefix.

### Curriculum

The student chooses either the 30-hour program, which requires three core courses, four concentration courses and a thesis, or the 36-hour program, which requires three core courses, five concentration courses and four elective courses.

The special feature of the coursework in the master's degree program is its emphasis on applications, laboratory experience and extensive use of computer software and hardware. All of the courses make extensive use of computers or require significant laboratory experimentation.

A formal plan of graduate study is prepared with the student's advisor. The general requirements listed are guides and serve as a model for students' planning for each of the concentrations.

### Thesis Proposal and Defense (Thesis Option)

Thesis students write and orally defend a thesis proposal. The written proposal and its oral defense are designed to evaluate the student's readiness to conduct research. The scope of this evaluation is the significance, soundness and viability of the proposed research, as well as the student's proficiency in their field. A student failing the proposal defense may request a re-examination within six months of the failure. Only one additional defense is permitted.

### Comprehensive Examination (Non-Thesis Option)

A comprehensive examination is required, covering the concentration courses. This comprehensive examination may be written or oral. At the time of the comprehensive exam at a specifically designated time, each student will be asked questions that specifically assess the student's mastery of course-related objectives. A student not passing the comprehensive examination may request a re-examination within six months of the failure. Only one additional examination is permitted after the failure of the original comprehensive examination.

### Thesis

Students whose research results in a thesis are required to **enroll in at least one thesis credit hour during any semester in which they are working on the thesis and must enroll in at least one thesis credit hour during the semester of degree completion.**

All theses presented must meet the requirements as listed in the *Policy and Style Manual for Thesis Proposals and Master's Theses* and the **Thesis Format Review** and **Final Copy Due Dates**. The website [cnu.edu/gradstudies/](http://cnu.edu/gradstudies/) lists the regulations in this regard. Finally, theses may be placed in the CNU library as research sources available to the academic community.

## GRADUATION REQUIREMENTS

### Thesis Option

- Successful completion of 30 hours of the M.S. in Applied Physics and Computer Science degree program, consisting of 21 hours coursework and 9 hours of thesis.
- An overall graduate grade point average of 3.00 in all CNU courses submitted for graduate credit;
- Successful completion of the thesis proposal and oral defense;
- Successful defense of the completed thesis and presentation of the appropriate number of approved copies to the Graduate Studies office by the published deadline;
- Presentation of an electronic copy of the thesis in a suitable format to the department and the Office of Graduate Studies for archive purposes only.

### Non-Thesis Option

- Successful completion of 36 hours of the M.S. in Applied Physics and Computer Science degree program coursework;
- An overall graduate grade point average of 3.00 in all CNU courses submitted for graduate credit;
- Successful completion of the comprehensive examination.

**Graduate Assistantships**

See page 33 of the catalog for special terms, criteria and procedures. Applications are available on the department's website.

**For further information:**

Contact the APCS Graduate Program Director, Dr. Peter Monaghan, by email at [peter.monaghan@cnu.edu](mailto:peter.monaghan@cnu.edu) or (757) 594-8293.

**MASTER OF SCIENCE  
IN APPLIED PHYSICS AND COMPUTER SCIENCE  
COMPUTER SCIENCE CONCENTRATION**

**Academic Prerequisites**

All applicants should have completed a three-semester sequence in mathematics, including at least two semesters of calculus; and programming, including data structures. It is assumed that these courses are at least at the level of the following texts: Anton, *Calculus*; Liang, *Java Programming*; Aho, Hopcroft and Ullman, *Data Structures*; Mano, *Computer Engineering*. Students who do not have all prerequisites may, in some cases, be allowed to take a graduate independent study course to develop the necessary background for further graduate work.

**Program of Study — 30-36 Credits**

To ensure a depth and focus appropriate to the master's level and student's interests, the student's Plan of Study must be approved by the Graduate Program Director.

	<u>Thesis</u> <b>9 credits</b>	<u>Non-Thesis</u> <b>9 credits</b>
<b>Core Courses</b>		
CPSC 501      Software System Design and Implementation		
CPSC 502      Communications I (Computer Networks)		
CPSC 510      Artificial Intelligence I		
<b>Concentration Courses</b>	<b>12 credits</b>	<b>15 credits</b>
Select CPSC or PCSE courses from the M.S. in Applied Physics and Computer Science program. <i>NOTE: If PCSE 579 is successfully completed three times, it is treated as if the student completed a three-credit course and will be applied as such to the graduation requirements.</i>		
<b>Thesis</b>	<b>9 credits</b>	
PCSE 699      Thesis Research (1-9)		
OR		
<b>Non-Thesis</b>		<b>12 credits</b>
12 additional credit hours of CPSC courses from the M.S. in Applied Physics and Computer Science program		
<b>Total for M.S. in APCS</b>	<b>30 credits</b>	<b>36 credits</b>

**MASTER OF SCIENCE  
IN APPLIED PHYSICS AND COMPUTER SCIENCE  
COMPUTER SYSTEMS ENGINEERING AND  
INSTRUMENTATION CONCENTRATION**

**Academic Prerequisites**

All applicants should have completed a two-semester sequence in physics, including mechanics and at least two labs; a five-semester sequence in mathematics, including calculus, matrix methods and differential equations; programming, including data structures; a course in computer organization and architecture; and a course with a lab in circuit analysis. It is assumed that these courses are at least at the level of the following texts: Serway, *Classical and Modern Physics*; Anton, *Calculus*; Williams, *Linear Algebra with Applications*; Boyce and DiPrima, *Ordinary Differential Equations*; Liang, *Java Programming*; Aho, Hopcroft and Ullman, *Data Structures*; Mano, *Computer Engineering*; Hayt and Kemmerly, *Circuit Theory*.

**Program of Study - 30-36 Credits**

To ensure a depth and focus appropriate to the master's level and student's interests, the student's Plan of Study must be approved by the Graduate Program Director.

	<b>Thesis</b>	<b>Non-Thesis</b>
<b>Core Courses</b>	<b>9 credits</b>	<b>9 credits</b>
PHYS 521      Computer Architecture		
CPSC 501      Software System Design and Implementation		
CPSC 502      Communications I (Computer Networks)		
<b>Concentration Courses</b>	<b>12 credits</b>	<b>15 credits</b>
Select courses from the M.S. in Applied Physics and Computer Science program.		
<i>NOTE: If PCSE 579 is successfully completed three times, it is treated as if the student completed a three-credit course and will be applied as such to the graduation requirements.</i>		
Listed below are some examples.		
PCSE 503      Data Acquisition		
PHYS 522      Microprocessor-based Systems		
PHYS 621      Digital Signal Processing		
CPSC 525      Object Oriented Programming and Design		
CPSC 611      Communications II		
CPSC 621      Parallel Processing		
<b>Thesis</b>		
PCSE 699      Thesis Research (1-9)	<b>9 credits</b>	
OR		
<b>Non-Thesis</b>		
12 additional credit hours of courses from the M.S. in Applied Physics and Computer Science program		<b>12 credits</b>
<b>Total for M.S. in APCS</b>	_____	_____

**30 credits** **36 credits**

**MASTER OF SCIENCE  
IN APPLIED PHYSICS AND COMPUTER SCIENCE  
APPLIED PHYSICS CONCENTRATION**

**Academic Prerequisites**

All applicants should have completed a three-semester sequence in physics, including modern physics and at least two labs; a five-semester sequence in mathematics, including calculus, matrix methods and differential equations; programming, including data structures; and a course with a lab in circuit analysis. It is assumed that these courses are at least at the level of the following texts: Serway, *Classical and Modern Physics*; Anton, *Calculus*; Williams, *Linear Algebra with Applications*; Boyce and DiPrima, *Ordinary Differential Equations*; Liang, *Java Programming*; Aho, Hopcroft and Ullman, *Data Structures*; Hayt and Kemmerly, *Circuit Theory*.

**Program of Study — 30-36 Credits**

To ensure a depth and focus appropriate to the master's level and student's interests, the student's Plan of Study must be approved by the Graduate Program Director.

<b>Core Courses</b>	<u><b>Thesis</b></u> <b>9 credits</b>	<u><b>Non-Thesis</b></u> <b>9 credits</b>
PHYS 501      Models of Dynamical Systems (3)		
PHYS 504      Electromagnetic Theory (3)		
PHYS 502      Quantum Physics (3)		
OR		
PHYS 506      Thermodynamics & Statistical Physics (3)		

**Concentration Courses****12 credits****15 credits**

Select any four PHYS or PCSE courses from the M.S. in Applied Physics and Computer Science program, not including any course taken to fulfill the core courses requirement. CPSC 501 is also an acceptable choice. *NOTE: If PCSE 579 is successfully completed three times, it is treated as if the student completed a three-credit course and will be applied as such to the graduation requirements.*

**Thesis**

PCSE 699	Thesis Research (1-9)	<b>9 credits</b>
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OR

**Non-Thesis**

12 additional credit hours of courses from the M.S. in Applied Physics and Computer Science program	<b>12 credits</b>
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**Total for M.S. in APCS****30 credits****36 credits**

**MASTER OF SCIENCE IN ENVIRONMENTAL SCIENCE****Dr. Matthew Lattanzio, Graduate Program Director****Forbes Hall 1004****matthew.lattanzio@cnu.edu****(757) 594-7044**

The Master of Science in Environmental Science is designed for current and prospective students in the rapidly growing field of environmental monitoring and conservation. This degree program is flexible enough to fit the interests and needs of a wide variety of students and is designed for students planning to pursue a Ph.D., teachers desiring a M.S. in environmental science, or students interested in careers involving environmental assessment, monitoring and conservation.

The core courses are those mentioned most frequently by employers, consultants and educators as those needed for successful employment. The remainder of the curriculum is designed to enhance the understanding of ecosystem ecology, the conservation of organisms and their environment, and environmental chemistry. Many of these courses involve or consist entirely of fieldwork, since the majority of the employers surveyed are seeking graduates with first-hand knowledge of analyzing the environment.

**Admission Requirements for Degree-seeking Students**

Admission into the program is competitive, and applications are reviewed holistically. Ideal candidates have a strong undergraduate transcript, the ability to work independently and see a project to completion, and an interest in scientific research. Components of the application:

1. A baccalaureate degree from an accredited college or university in a relevant field
2. An official transcript from the baccalaureate institution with the degree posted, and official transcripts for all graduate work taken at other institutions.
3. Two recommendation forms from people who can attest that the applicant is likely to be successful in graduate-level academic work.
4. Resume with the following information:
  - Contact information
  - Diplomas and degrees awarded and in progress
  - Awards, honors, and grants
  - Work experience, both volunteer and paid
  - Extracurricular activities, including participation in research
  - Interests and skills related to environmental science
5. Answers to the following prompts (250 words or less for each prompt):
  - a) Explain why you are interested in pursuing a Master's degree in Environmental Science, the areas of study in Environmental Science that you find interesting, and your long-term academic and career goals.
  - b) Describe your academic path to graduate school. You may choose to describe a course or experience that was instrumental in setting you on a path to environmental science, other possible majors or career trajectories you have considered, time spent away from college, academic hurdles and accomplishments, etc. If you have faced circumstances that have negatively affected your academic career to date, it would be appropriate to explain them here.
  - c) Describe a challenging project that you have completed, state why it was challenging, and explain the strategies you used to overcome obstacles. The project may be academic in nature but also may be related to a job, a hobby, or an extracurricular activity.
  - d) If you have participated in research either in a class or outside of class, describe your project and what aspects of research you find rewarding. If you have not participated in research yet, explain why you are interested in conducting research as part of coursework and/or a thesis in a Master's degree.
  - e) The Master's in Environmental Science program at Christopher Newport values and supports sociocultural diversity. In your experience and/or opinion, how do a diversity of views, experiences, and ideas promote research and scholarship goals in environmental science?
6. For students selecting the thesis option, ranking of preferred thesis advisors. Applicants will be provided with a list of faculty currently taking thesis students and potential thesis topics. Prospective students should also contact faculty members with similar research interests to determine if they are accepting new graduate students and are encouraged to speak with the Graduate Program Director if they need assistance selecting faculty members to contact.
7. Students will also provide evidence of satisfactory completion of undergraduate coursework that is suitable preparation for graduate coursework in environmental science. At a minimum, students need to have taken: a college-level mathematics or statistics course; an introductory sequence in Biology and upper-level coursework in Chemistry or vice versa; and for thesis students, coursework appropriate for thesis topic preparation. More coursework in the sciences is favorable.

8. Optional: applicants may submit GRE scores if desired. Standardized test scores are not a required component of the application and lack of test scores will not reduce the quality of an application.

### Academic Policy for Non-degree Students

Non-degree students are limited to 12 hours of graduate study. Up to 12 credits of graduate study may be applied to the graduate degree should a non-degree student apply and be accepted to degree-seeking status. Should a non-degree student desire additional courses beyond the 12-credit limit, they may petition the Graduate Program Director for a waiver of this limit. Non-degree seeking students must meet the prerequisites before enrolling in a graduate course or obtain the consent of the instructor. Admission requirements for non-degree students are found on page 14 of this catalog.

### Changing from Non-degree Status to Degree-seeking Status

A non-degree student may apply to change to degree-seeking status if they have completed 12 hours of CNU graduate courses with a cumulative 3.0 GPA or higher, and has a status of Good Academic Standing.

To apply, submit the *Request for Change to Degree-seeking Status* form to Graduate Admission along with the documentation listed in 'Admission Requirements for Degree-seeking Students' shown on this page.

### Goals of the Program

The curriculum of this program will contribute to the achievement of instructional goals in the following areas:

1. Solid background in ecological and environmental conservation theory;
2. Skills required for employment with environmental assessment/monitoring businesses, and state and federal governmental agencies;
3. Research and technical writing skills;
4. Preparation for further graduate work.

### Curriculum

The Master of Science in Environmental Science degree program consists of thesis or non-thesis options. Many courses feature a prominent laboratory or field component in order to teach analytical and practical skills, while other courses are designed to build research and technical writing skills. The remainder of the course offerings is designed to enhance the understanding of ecology and the natural history of organisms. Many of the courses involve, or consist entirely of, fieldwork since employers are seeking graduates with first-hand knowledge of the environment and environmental assessment methods. Late afternoon and evening courses are available. Most courses beyond the core courses may be taken in any sequence.

### Thesis Option

The thesis option is a 30-hour program that requires 6 hours of core courses, 18 hours of concentration courses (chosen with the guidance of the student's advisor and thesis committee), and 6 hours of thesis research. An oral presentation and defense of the written thesis are required.

### Non-Thesis Option

The non-thesis option is a 33-hour program that consists of 6 hours of core courses, 24 hours of concentration courses, a 3-hour capstone course, and a written comprehensive examination upon completion of the coursework.

### Comprehensive Examinations

For thesis students, a written comprehensive examination is required to evaluate each student's proficiency synthesizing and communicating complex scientific information. No later than two weeks after the proposal meeting, each student will be asked written questions by their committee that require further research, elaboration, and synthesis on topics related to the thesis. Answers to the questions are due to the committee for evaluation no later than three months after the proposal meeting. Any member of the committee may request a thesis committee meeting with the student to further discuss the answers before giving the student passing marks. Non-thesis students are required to take a written comprehensive examination upon the completion of coursework that assesses mastery of course-related material. A student failing the comprehensive exam may request re-examination within six months of the failure, with only one additional examination being permitted.

### Thesis

Students in the thesis option are required to enroll in one thesis credit hour during any semester in which they are working on the thesis and must enroll in at least one thesis credit hour during the semester of degree completion. All theses presented must meet the requirements as listed in the *Policy and Style Manual for Thesis Proposals and Master's Theses*. Access the manual at the Graduate Studies/Current Students/Forms and Thesis Manual website: [cnu.edu/admission/graduate](https://my.cnu.edu/admission/graduate). For currently enrolled students, the **Thesis Format Review** and **Final Copy Due Dates** can be accessed by logging in, at: <https://my.cnu.edu/gradstudies/current/> under Forms and Documents. Theses will be placed in the CNU library and made available in the ProQuest Dissertations and Theses database as research sources available to the academic community.

**Graduation Requirements****Thesis Option (30 credits)**

- Successful completion of 24 hours (minimum) of the M.S. in Environmental Science degree program coursework plus 6 hours of thesis (ENVS 699);
- Cumulative graduate grade point average of 3.00 in all CNU courses submitted for graduate credit;
- Successful completion of the comprehensive examinations;
- Successful presentation and defense of thesis and appropriate number of approved thesis copies to the Graduate Studies office by the published deadline;
- Presentation of an electronic copy of the thesis to the chair of the committee and the Graduate Studies office in a pdf format only.

**Non-Thesis Option (33 credits)**

- Successful completion of 33 hours (minimum) of the M.S. in Environmental Science degree program coursework;
- Cumulative graduate grade point average of 3.00 in all CNU courses submitted for graduate credit;
- Successful completion of the comprehensive examinations.

**Internships and Graduate Assistantships**

Graduate assistants are employed to conduct research, perform administrative activities, and/or teach as directed by the graduate faculty within the department. The position requires a weekly time commitment and is awarded on a competitive basis. To qualify, a student must be a degree-seeking student with no limits or provisions, and be enrolled in 6-9 graduate credit hours in the semester of the award. Contact the Graduate Program Director for details. Additional information is on page 33 of this catalog.

Internships with environmental departments of municipalities, resource agencies, laboratories and engineering firms are available. The student gains practical experience in a workplace environment learning detailed methods of site evaluation, environmental assessment and technical report preparation. Many of the internships offer financial support to the student.

**For further information:**

Contact the ENVS Graduate Program Director, Dr. Matthew Lattanzio by email at [matthew.lattanzio@cnu.edu](mailto:matthew.lattanzio@cnu.edu) or (757) 594-7044.



## ACCOUNTING

### **ACCT 500. Advanced Financial Statement Analysis. [Meets with FINC 500] (3-3-0) (Fall)**

*Corequisite: ACCT 570 or FINC 570*

This course examines the interrelationships among accounting statements, economic analysis and corporate finance models. It covers corporate reporting under Generally Accepted Accounting Principles (GAAP) and International Financial Reporting Standards (IFRS). Specific topics include financial analysis, pro forma financial statements and equity valuation.

### **ACCT 502. Advanced Tax Planning and Research: (3-3-0) (Fall)**

This course is a study of advanced topics in taxation with an emphasis on using tax as a planning tool for various entities including corporations, conduit entities, estates and trusts to achieve their objectives. Students will learn how to use tax research tools to analyze tax planning and compliance issues and to evaluate and communicate the tax implications of various transactions.

### **ACCT 505. Emerging Assurance Technologies (3-3-0)**

*Corequisite: ACCT 570 or FINC 570. (Spring)*

Building on their knowledge of audit theory and its application to the audit of financial statements, this course teaches students how to integrate big data and analytics into the audit process. Students will acquire the skills necessary to know what questions to ask of the data and the ability to use analytics output to draw audit conclusions and business insights. Students will learn the newest audit technologies and audit methodologies that will allow for the auditor to provide continuous assurance and to address information system issues.

### **ACCT 552. Financial Regulation and Professional Responsibility. (3-3-0) [Meets with FINC 552] (Spring)**

This course covers the principles, rules, and regulations governing the conduct of Certified Public Accountants, Analysts, Certified Financial Planners, and Personal Financial Specialists. It addresses the regulatory challenges presented by new technologies such as blockchain. Additionally, the course covers professional standards of practice and the legal and ethical implications of conflicts of interest, insider trading, and fraud.

### **ACCT 561. International Accounting and Finance (3-3-0)**

This course compares the effects of US GAAP and international accounting standards on financial reporting and financial analysis. Students will learn about differences in financial measurement and reporting practices that exist internationally, the reasons for these differences and their resultant financial statement effects. Other topics include International Financial Reporting Standards (IFRS), foreign currency translation, global auditing standards,

international financial statement analysis, financial risk management, international taxation and transfer pricing. The course will address the management of foreign exchange exposure, foreign direct investment decisions, and multinational capital budgeting.

### **ACCT 570. Data Management and Analytics [Meets with FINC 570] (3-3-0) (Fall)**

This course provides students with knowledge of data analytics techniques for financial analysis and decision making. The course includes hands on problem solving using SQL and programming languages such as Python for data extraction, cleaning, and visualization. This course focuses on topics of particular importance to the accounting and finance professional.

### **ACCT 572. Cybersecurity for Finance and Accounting Professionals. [Meets with FINC 572] (3-3-0) (Fall)**

This course covers the data and technological frameworks that define cybersecurity. Students gain insight into the importance of cybersecurity to the finance and accounting profession through exploring foundational cybersecurity principles, security architecture, risk management, and emerging IT and IS technologies. The course also addresses the legal environments that impact cyber-security.

### **ACCT 595. Advanced Topics**

**[Meets with FINC 595] (1-3 Credits)**

Course topics are selected on the basis of faculty and student interests. Students may take a maximum of 3 credit hours of a topics course in a given semester, and a maximum of 6 credit hours in their total academic program.

### **ACCT 599. Independent Study. (1-3 Credits)**

Prerequisite: Enrollment in the MFInA Program or consent of instructor.

Qualified students may enrich their program through directed reading or independent research under faculty supervision and for University credit. Goals, prerequisites, stages and grading are agreed upon in writing by the faculty member and the student and are submitted for approval prior to enrollment. See page 19 for specific instructions and procedures.

## CHEMISTRY

### **CHEM 535. Nanochemistry & Nanotechnology**

**[Meets with CHEM 435] (3-3-0)**

This course will cover the fundamentals of nanochemistry and nanotechnology in terms of synthesis, characterization and applications of nanomaterials.

### **CHEM 538. Teaching Secondary Science (4-0-4)**

*Prerequisite: Enrollment in the MAT Program or consent of instructor.*

A course in which prospective teachers are introduced to methods and materials of teaching chemistry. Emphasis

on laboratory exercise and demonstration. Students are expected to design and instruct a variety of laboratory exercises. Students maintain a journal of practical and methodology experiences.

**CHEM 543. Atmospheric Chemistry**  
**[Meets with CHEM 443] (3-3-0)**

This course presents an introduction to the chemistry of the troposphere and stratosphere. Emphasis is placed on the structure of the atmosphere, photochemical smog, global climate change and greenhouse gases, stratospheric ozone depletion, and particulate matter in the troposphere.

**CHEM 545. Instrumental Methods in Chemistry**  
**[Meets with CHEM 445] (4-2-0)**

*Corequisite: CHEM 545L.*

Application of chemical principles to instrumentation. Instruction in operation of a variety of modern instruments.

**CHEM 545L. Instrumental Methods in Chemistry Laboratory** [Meets with CHEM 445L] (0-0-5)

*Corequisite: CHEM 545.*

Laboratory exercises include instruction in operation of a variety of modern instruments. Lab fees apply each term.

**CHEM 565. Environmental Chemistry**  
**[Meets with CHEM 465] (3-3-0)**

The study of the reactions, transport, effects, sources and fates of chemical species in the atmospheric, aquatic and terrestrial environments. Students prepare a comprehensive paper and presentation.

**CHEM 570. Advanced Organic Chemistry**  
**[Meets with CHEM 470] (3-3-0)**

Synthesis is a central part of organic chemistry. Students in this course study the recent developments in organic chemistry and learn how to keep abreast of this ever-changing subject.

**CHEM 595. Advanced Topics in Chemistry**  
**(Credit varies)**

Course topics are selected on the basis of faculty and student interests. Students may take a maximum of 3 credit hours of a topics course in a given semester, and a maximum of 9 credit hours in their total academic program. If more than 9 credit hours are taken, only the last 9 count toward the degree.

**CHEM 599. Independent Study (1-3 Credits)**

Qualified students may enrich their program through directed reading or independent research under faculty supervision and for University credit. Goals, prerequisites, stages and grading are agreed upon in writing by the faculty member and the student and are submitted for approval prior to enrollment. See page 19 for specific instructions and procedures.

## COMPUTER SCIENCE

**CPSC 501. Software System Design & Implementation**  
**[Meets with CPSC 480] (3-3-0)**

*Prerequisites: Graduate standing or permission of the instructor. (Fall)*

The management, specification, design, implementation and documentation of complex software systems. A paper or class presentation based on independent reading of research papers concerning new developments in software engineering are required. Students are expected to learn to use software systems such as CASE tools.

**CPSC 502. Communications I (3-3-0)**

*Prerequisites: Graduate standing and ability to program in C or C++, or permission of the instructor. (Spring)*

A comprehensive view of data communications with an emphasis on computer networks. Baseband and broadband local area networks, OSI model, logical link protocols, media with an emphasis on fiber-based interfaces, topology and routing/flow control. TCP/IP protocols and socket-based application development are emphasized.

**CPSC 510. Artificial Intelligence I**  
**[Meets with CPSC 471] (3-3-0)**

*Prerequisites: Graduate standing within the department. (Fall)*

This course is an introduction to the mathematical and computational foundations of artificial intelligence. Its emphasis is on those elements of artificial intelligence that are most useful for practical applications. Topics include heuristic search, problem solving, game playing, knowledge representation, logical inference, planning, reasoning under uncertainty, expert systems, machine learning, and language understanding. Programming assignments are required.

**CPSC 521. Computer Architecture**  
**[Same as PHYS 521; meets with CPEN 414] (3-3-0)**

*Prerequisites: Graduate standing within the department or permission of instructor. (Spring)*

Advanced issues and techniques in computer architecture and design. Instruction set design and performance impact. Architectural simulation using VERILOG. Pipelining. Computer arithmetic and vector processors. Advanced memory and cache design. I/O interfaces for high performance.

**CPSC 525. Object Oriented Programming & Design**  
**[Meets with CPSC 425] (3-3-0)**

*Prerequisites: Graduate standing or permission of the instructor. (Spring)*

Basic object-oriented design and applications. This course introduces object-oriented design methods and provides guidance in the effective implementation of object oriented programs. Substantive, additional work in the form of more advanced assignments and projects are required to distinguish this class from the cross-listed course.

**CPSC 550. Distributed Operating Systems****[Meets with CPSC 450] (3-3-0)***Prerequisites: Graduate standing within the department. (Spring)*

A study of operating systems with emphasis on distributed systems and intra-system communications. Substantive, additional work in the form of more advanced assignments and projects are required to distinguish this class from the cross-listed course.

**CPSC 560. Introduction to Compilers****[Meets with CPSC 460] (3-3-0)***(Even Year Spring)*

A study of the problems of translating procedure oriented languages; lexicographic analysis, syntax checking, code generation and optimization, error detection and diagnostics. Substantive, additional work in the form of more advanced assignments and projects are required to distinguish this class from the cross-listed course.

**CPSC 570. Theoretical Computer Science****[Meets with CPSC 470] (3-3-0)***Prerequisites: Graduate standing within the department. (Fall)*

Presentation of basic results relating to formal models of computation. Emphasis is placed on developing skills in understanding rigorous definitions in computing and in determining their logical consequences. Substantive, additional work in the form of more advanced assignments and projects are required to distinguish this class from the cross-listed course.

**CPSC 575. Android Mobile Computing (3-3-0)***Prerequisites: Graduate standing with the department. (Fall)*

This course covers core concepts of the Android programming platform and its key components using the Android SDK and the Java programming languages. Topics discussed include application lifecycle, user interface design, activities and intents, data persistence, networking, messaging, location-based applications and android services.

**CPSC 585. Principles & Applications of Multimedia [Meets with CPSC 485] (3-3-0)***Prerequisites: Graduate standing with the department. (Fall)*

The purpose of this course is to learn the principles and techniques of multimedia, focusing on digital images and audio in print and online form. Technical topics include the nature of sound and images and their digital representation and multimedia relevant Web protocols. The course also addresses copyright issues, graphic design and human interface principles. A semester project is required.

**CPSC 595. Advanced Topics in Computer Science (Credit varies)**

Course topics are selected on the basis of faculty and student interests. Students may take a maximum of 3 credit

hours of a topics course in a given semester, and a maximum of 9 credit hours in their total academic program. If more than 9 credit hours are taken, only the last 9 count toward the degree.

**CPSC 599. Independent Study (1-3 Credits)**

Qualified students may enrich their program through directed reading or independent research under faculty supervision and for University credit. Goals, prerequisites, stages, and grading are agreed upon in writing by the faculty member and the student and are submitted for approval prior to enrollment. See page 19 for more information.

**CPSC 611. Communications II (3-3-0)***Prerequisite: CPSC 502. (Even Year Fall)*

Analysis of communication systems through the application of queuing theory results and the modeling and simulation of these systems by state-of-the-art network simulation tools. Client/server network software strategies with an emphasis on RPC.

**CPSC 621. Parallel Processing (3-3-0)***Prerequisite: CPSC 521 or PHYS 521. (Odd Year Fall)*

Advanced topics in concurrent processor design. Memory and I/O structures for high performance and parallel architectures. Comparison of vector processing machines. SIMD architectures and algorithms. MIMD architectural options. Centralized vs. distributed memory. Shared memory vs. message passing. Algorithms for different MIMD machines. Parallel programming.

**CPSC 642. Artificial Intelligence II (3-3-0)***Prerequisites: CPSC 510, or permission of the instructor. (Odd Year Spring)*

Topics in artificial intelligence. Content will vary. Possible topics include advanced neural nets, qualitative reasoning and natural language processing.

**ENGLISH****ENGL 501. Teaching Literature (3-3-0)***Prerequisite: Enrollment in the MAT Program or consent of instructor. (Summer)*

In this seminar, students explore methods for teaching literature. The participants read and analyze various literary works. In addition the seminar introduces students to literary and pedagogical theories, but the emphasis is on the application of these theories to the English classroom.

**ENGL 521. Developing Elementary Writers and Readers (3-3-0)***Prerequisite: Enrollment in the MAT Program or consent of the instructor. (Fall)*

This course offers an introduction to the scientific research base for effective writing instruction. Topics will include stages of spelling and writing development and highlight the connections between reading, spelling, and writing in phonemic awareness, phonics, fluency, vocabulary,

text structure, and self-regulated strategy use. Pre-service teachers will learn a variety of evidence-based approaches to effectively teach writing in elementary classrooms. The course includes a field option that allows candidates to work with elementary students to improve their writing skills.

### **ENGL 522. Content Area Literacy (3-3-0)**

*Prerequisite: Enrollment in the MAT Program or consent of the instructor. (Fall)*

This graduate course is designed to identify effective strategies for the teaching of reading, writing, and other literacy skills in middle and secondary schools. It seeks to investigate strategies that are useful across content areas as well as identifying some that are pertinent to specific content areas. The premise of the course is that reading, writing and other literacy skills can and should be taught concurrently with subject matter.

### **ENGL 526. Teaching Writing in Secondary English Classes (3-3-0)**

*Prerequisite: Enrollment in the MAT Program or consent of instructor. (Fall)*

This course is for secondary English teaching candidates, threading together theoretical and practical approaches to the various forms of written discourse that teachers are expected to teach and assess. The class covers forms of written expression, from the personal narrative to the extended research project, and methods of expression, from private journaling, traditional print, and visual discourse, to help the novice teacher begin to define personal and professional pedagogical ideologies. The course includes a field option that allows candidates to work with secondary students to improve their writing skills.

### **ENGL 595. Advanced Topics in English (Credit varies)**

*Prerequisite: Enrollment in the MAT Program or consent of instructor.*

Course topics are selected on the basis of faculty and student interests. Students may take a maximum of 3 credit hours of a topics course in a given semester, and a maximum of 9 credit hours in their total academic program. If more than 9 credit hours are taken, only the last 9 count toward the degree.

### **ENGL 599. Independent Study (1-3 Credits)**

*Prerequisite: Enrollment in the MAT Program or consent of instructor.*

Qualified students may enrich their program through directed reading or independent research under faculty supervision and for University credit. Goals, prerequisites, stages and grading are agreed upon in writing by the faculty member and the student and are submitted for approval prior to enrollment. See page 19 for specific instructions and procedures.

## **ENVIRONMENTAL SCIENCE**

### **ENVS 505. Technical and Scientific Writing (3-3-0)**

This course discusses the fundamentals of technical writing with consideration of other types of scientific writing. The stylistic and mechanical problems characteristic of technical writing are considered and worked on individually and in groups. Students write and edit journal articles.

### **ENVS 510. Biometry (3-3-0)**

The application of statistical methods to biological problems. Experimental design, data acquisition, single and multiple analysis of variance, regression and correlation are covered. Test selection and modeling are also included.

### **ENVS 518. Biological Conservation: Theory and Practice (3-3-0)**

Biological conservation is a relatively new, applied discipline having more ethical and sociopolitical ramifications than is typical of non-medical scientific disciplines. This course covers the development of conservation theory, biodiversity and problems of determining and evaluating biodiversity, relevant ecological principles, and ethical and economic issues. The course considers current conservation problems and the methods and strategies. The first part of the course is in lecture format and the second part is in seminar format.

### **ENVS 519. Restoration Ecology (3-3-0)**

This course familiarizes the student with the newly emerging science of restoration ecology, including its theoretical foundation and its application in today's world. The first part of the course concerns case studies and the second part of the course, in seminar format, concerns recently published studies found in the peer-reviewed literature.

### **ENVS 520. Community Ecology (3-3-0)**

Community ecology is the study of patterns and processes involving two or more species in the same location. This course emphasizes the advanced study of ecological communities, with emphasis on theory, models, and contemporary applications. It will consist of lecture videos, selected readings, discussions of classic and contemporary literature in community ecology, quantitative content assessments, literature critiques, and a cumulative review or research paper on a topic of your choice.

### **ENVS 522. Summer Field Studies (2-0-2)**

A one-week field camp in selected habitats emphasizing application of field data gathering and processing techniques to the solving of multifaceted environmental problems. Travel, camping and boat work required. An additional day on campus is required for student presentations. **This course is repeatable twice for a maximum of 4 credits.**

### **ENVS 525. Environmental Regulations (3-3-0)**

A seminar designed to explore current environmental regulations and their impact on various constituents.

**ENVS 530. Biogeography [Meets with BIOL 430] (3-3-0)**

The study of the patterns of distributions of organisms, both past and present, and the abiotic and biotic factors that produced those distributions.

**ENVS 532. Wetlands Ecology (4-3-0)**

*Corequisite: ENVS 532L.*

A study of the structure and function of wetland systems from salt to fresh and tropical to the arctic. Concepts will cover hydrology, biogeochemistry, wetland development and succession. Wetland delineation, management, creation and restoration apply these concepts.

**ENVS 532L. Wetlands Ecology Laboratory (0-0-4)**

*Corequisite: ENVS 532.*

Field exercises in local wetlands applying principles from lecture. Lab fees apply each term.

**ENVS 534. Marine Ecology (4-3-0)**

*Corequisite: ENVS 534L.*

Ecology of the disturbed and non-disturbed marine environment. Topics covered include: global distribution of marine organism and the factors influencing their distribution, plankton ecology, the benthos, salt marsh and sea grass ecology, rocky shore and coral reef ecology, human exploitation and interference in marine habitats, and sampling techniques in marine systems.

**ENVS 534L. Marine Ecology Laboratory (0-0-4)**

*Corequisite: ENVS 534.*

Extensive field and local bay exercises applying principles from lecture. Lab fees apply each term.

**ENVS 535. Ornithology [Meets with BIOL 425] (4-3-0)**

*Corequisite: ENVS 535L.*

An introduction to the biology of birds. Topics covered include anatomy, physiology, behavior, ecology, evolution, identification and conservation. Students are expected to present an in-class lecture and lead one lab session.

**ENVS 535L. Ornithology Laboratory [Meets with BIOL 425L] (0-0-4)**

*Corequisite: ENVS 535.*

Lab is field-oriented and includes several Friday afternoon field trips and two weekend trips lasting one or two days. Students are required to attend two Friday afternoon trips and at least one weekend trip. Lab focuses on the identification of birds using both ocular and acoustic characters. Lab fees apply each term.

**ENVS 538. Limnology and Aquatic Biology (3-3-0)**

This course investigates the far-reaching effects of physical conditions such as temperature, flow, light intensity, and nutrient availability on organisms living in freshwater environments and considers how interactions between organisms may further influence biological communities in these systems. Application of ecological principles in the management and conservation of freshwater communities

is stressed throughout the course, which includes a mix of lecture, primary literature discussion, and data analysis and interpretation.

**ENVS 538L. Limnology & Aquatic Biology Laboratory (1-0-4) Prerequisite or corequisite: ENVS 538.**

Extensive field and laboratory exercises in local lakes and streams applying principles from lecture. Lab fees apply each term.

**ENVS 540. Environmental Microbiology (4-3-0)**

*Corequisite: ENVS 540L.*

The course investigates the role microorganisms play in terrestrial, aquatic and marine ecosystems. The course explores: the dynamics of microbial populations and communities; normal microbiota and their interactions with other organisms; and environmental pathologies in which microorganisms are the primary agent (e.g., coliforms and other fecal contaminants in water, and acidophiles in mine tailings).

**ENVS 540L. Environmental Microbiology Laboratory (0-0-4)**

*Corequisite: ENVS 540.*

Laboratory exercises include classic environmental testing procedures and novel new assessment procedures that have their roots in biochemistry and molecular biology. Lab fees apply each term.

**ENVS 545. Mammalogy [Meets with BIOL 445] (4-3-0)**

*Corequisite: ENVS 545L.*

A study of the basic principles of mammalian biology. Students learn to recognize Virginia's mammals and gain an understanding of global mammalian diversity and systematics. The course provides a broad understanding of the natural history of mammalian groups and species, and investigates the role of mammals in natural and urban systems. Conservation of this important taxonomic group is also discussed. Students are expected to present an in-class lecture and lead one lab session.

**ENVS 545L. Mammalogy Laboratory [Meets with BIOL 445L] (0-0-4)**

*Corequisite: ENVS 545.*

The lab is field oriented, and includes regular field trips to explore field biology and field identification. Lab fees apply each term.

**ENVS 550. Global Change (3-3-0)**

An examination of the evidence for and causes of global change. The impact of changes in the global cycles of C, N, P and H<sub>2</sub>O on ecosystem structure and function are examined. Atmosphere, terrestrial and aquatic biosphere changes are discussed along with their effect on plant and animal communities. Students present current scientific papers on various issues within this field.

**ENVS 555. GIS & Spatial Analysis Techniques [Meets with BIOL 435] (4-3-0)**

*Corequisite: ENVS 555L.*

In this course, computer information mapping, output design, spatial analysis, GPS applications, and remote sensing techniques are discussed, explored (hands-on), and applied to local and regional problems.

**ENVS 555L. GIS & Spatial Analysis Techniques Laboratory [Meets with BIOL 435L] (0-0-4)**

*Corequisite: ENVS 555*

Lab includes the application of ArcGIS (ESRI Co.) software in combination with collecting field data with Trimble GPS to geospatially address environmental questions. Lab fees apply each term.

**ENVS 575. Seminar in Scientific Communication (3-3-0)**

This special topics course, offered for students wishing to improve their formal and informal communication skills, is designed to be a graduate level seminar in which the students and instructor utilize a variety of learning techniques to explore current and practical issues in science communication and science education.

**ENVS 590. Seminars in Environmental Science (1-1-0 credits)**

*Prerequisites: May vary depending on the topic offered.*

A weekly course centered around departmental seminar presentations. Students in the course learn to moderate a seminar presentation and participate in discussions during seminars. Students are also expected to read the relevant literature and summarize presentations in writing. Course may be repeated for credit, for a maximum of 3 credit hours towards the degree.

**ENVS 595. Advanced Topics in Environmental Science (1-3 Credits)**

Course topics are selected on the basis of faculty and student interests. Students may take a maximum of 3 credit hours of a topics course in a given semester, and a maximum of 9 credit hours in their total academic program. If more than 9 credit hours are taken, only the last 9 count toward the degree.

**ENVS 599. Independent Study (1-3 Credits)**

Qualified students may enrich their program through directed reading or independent research under faculty supervision and for University credit. Goals, prerequisites, stages and grading are agreed upon in writing by the faculty member and the student and are submitted for approval prior to enrollment. See page 19 for specific instructions and procedures.

**ENVS 690. Evidence-Based Decision Making in Environmental Science (3-3-0)**

*Prerequisites: ENVS 505, ENVS 510*

A project-based course in which students use the primary literature and existing data sets to evaluate a problem or question in environmental science and propose a course of action. Projects will be selected based on faculty expertise and student interest, and may involve a community partner.

**ENVS 699. Thesis Research****(1-6 Credits, taken in increments)**

The student may not proceed beyond the first credit without thesis committee approval of the proposal. Students are required to be enrolled in at least one credit hour of ENVS 699 during any semester in which they are working on the thesis and must be enrolled in one thesis credit hour during the semester of degree completion.

**FINANCE****FINC 500. Advanced Financial Statement Analysis. [Meets with ACCT 500] (3-3-0) (Fall)**

*Corequisite: ACCT 570 or FINC 570*

This course examines the interrelationships among accounting statements, economic analysis and corporate finance models. It covers corporate reporting under Generally Accepted Accounting Principles (GAAP) and International Financial Reporting Standards (IFRS). Specific topics include financial analysis, pro forma financial statements and equity valuation.

**FINC 522. Advanced Corporate Finance (3-3-0)**

*Prerequisite: ACCT 570 or FINC 570*

This course examines the relationships between finance and microeconomics. The major focus is on advanced topics in capital structure and valuation principles and their theoretical underpinnings with an emphasis on applying modern finance theories that utilize strong analytical and quantitative skills. Specific topics include security valuation, money and capital markets, and quantitative methods in finance.

**FINC 524. Modern Portfolio Management: Performance Evaluation and Benchmarking (3-3-0) (Spring)**

This course is designed to introduce students to different aspects of modern portfolio theory, asset selection, allocation, and rebalancing. Both the mathematical and behavioral aspects of portfolio construction are studied. Risk assessment and optimal combination of securities are discussed in detail. The course makes extensive use of Matlab and Excel modeling as crucial parts of the Data Analytics applied to Finance.

**FINC 525. Wealth Management and Personal Hedging Strategies. (3-3-0) (Spring)**

The purpose of this course is to improve students' knowledge in wealth management and financial planning through case studies and completion of a complex financial plan. Students are expected to demonstrate advanced financial planning skills through the development and implementation of client-centered financial recommendations. The focus is on advanced private wealth management topics, such as multi-generational estate planning, sophisticated tax planning strategies, retirement planning, asset protection, and risk management. Practical hands-on experience with Tableau is emphasized to improve students' ability to tell stories with client data.

**FINC 532. Behavioral Finance and Professional Relationships. (3-3-0) (Fall)**

A study of the key psychological obstacles to value-maximizing behavior and steps that managers can take to mitigate their effects, using the traditional tools of finance. Focus is on understanding the underlying factors and processes that result in nonoptimal decision making by financial managers and investment professionals. Topics include perceptions about risk and reward and financial decision making in the areas of investing, trading, valuation, capital budgeting, capital structure, dividend policy, agency conflicts, corporate governance, and mergers and acquisitions. The key role played by emotions and recent findings from neuroscience are explored. In addition, the course develops the skills required of finance and accounting professionals to build successful client relationships.

**FINC 544. Advanced Derivatives Analysis (3-3-0) (Spring)**

This course will take the students beyond the valuation of derivatives and will focus on their applications. A thorough understanding and analysis of financial derivatives are keys to corporate risk management and financial engineering. In depth analysis of options, futures, and financial swaps in modern portfolio management, detailed study of options on debt, foreign currencies, and futures contracts will be addressed. Effective use of Excel and other data analysis techniques will provide students with valuable marketable skills.

**FINC 552. Financial Regulation and Professional Responsibility [Meets with ACCT 552] (3-3-0) (Spring)**

This course covers the principles, rules, and regulations governing the conduct of Certified Public Accountants, Analysts, Certified Financial Planners, and Personal Financial Specialists. It addresses the regulatory challenges presented by new technologies such as blockchain. Additionally, the course covers professional standards of practice and the legal and ethical implications of conflicts of interest, insider trading, and fraud.

**FINC 562. Entrepreneurial Finance (3-3-0)**

*Corequisites: ACCT 500 or FINC 500;*

This course introduces students to the full range of alternative financing for enterprises, including friends and family, angels, venture capital, special situation debt, hedge funds, real estate, and leveraged buyouts. Students learn to address the analysis and valuation of opportunities from startup through the early stages of growth to consolidation and bankruptcy. Finally, students are exposed to the use of alternative financial vehicles in a diversified investment portfolio.

**FINC 570. Data Management and Analytics (3-3-0) [Meets with ACCT 570] (Fall)**

This course provides students with knowledge of data analytics techniques for financial analysis and decision making. The course includes hands on problem solving using SQL and programming languages such as Python for data extraction, cleaning, and visualization. This course focuses on topics of particular importance to the accounting and finance professional.

**FINC 572 . Cybersecurity for Finance and Accounting Professionals. [Meets with ACCT 572] (3-3-0)**

This course covers the data and technological frameworks that define cybersecurity. Students gain insight into the importance of cybersecurity to the finance and accounting profession through exploring foundational cybersecurity principles, security architecture, risk management, and emerging IT and IS technologies. The course also addresses the legal environments that impact cyber-security.

**FINC 591. Integrated Financial Analysis and Strategy - Capstone Course. (3-3-0) (Spring)**

*Prerequisites: ACCT 500 or FINC 500, ACCT 500*

This course builds upon the material covered in the previous courses and uses case studies and simulations to develop professional skills. Students will be challenged to utilize integrative technical knowledge, data analytics tools and discipline-specific concepts to address existing and emerging issues in financial analysis. Additionally, students will conduct a team-based, semester-long project relevant to the MFinA curriculum for clients and present their results to client representatives.

**FINC 595. Advanced Topics [Meets with ACCT 595] (1-3 Credits)**

Course topics are selected on the basis of faculty and student interests. Students may take a maximum of 3 credit hours of a topics course in a given semester, and a maximum of 6 credit hours in their total academic program.

**FINC 599. Independent Study. (1-3 Credits)**

*Prerequisite: Enrollment in the MFinA Program or consent of instructor.*

Qualified students may enrich their program through directed reading or independent research under faculty supervision and for University credit. Goals, prerequisites, stages and grading are agreed upon in writing by the faculty member and the student and are submitted for approval prior to enrollment. See page 19 for specific instructions and procedures.

**FINE ARTS****FNAR 534. Theory and Practice of Art Education (3-3-0)**

*Prerequisite: Enrollment in the MAT Program or consent of instructor. (Fall)*

A study of the theories of art education related to child development, perceptual theory and general educational philosophy. Course focuses on the disciplines of art, art history, art production, art criticism and aesthetics. Field observation is required.

**FNAR 535. Integrating the Visual Arts (3-3-0)**

*Prerequisite: Enrollment in the MAT Program or consent of instructor. (Summer)*

This seminar invites students to consider and create the varied ways in which the visual arts can be integrated within the context of public school teaching. A number of integrative approaches are considered: integrating the arts into other content areas; integrating one's own personal talents and interest into the art classroom; integrating community resources into the curriculum; and integrating various aspects of the visual arts into teaching units.

**FNAR 538 Apprenticeship in Teaching Art (3-1-2)**

*Prerequisite: Enrollment in the MAT Program or consent of the instructor. (Spring)*

This course is an apprenticeship class within the CNU Art Department. Teacher candidates are assigned to a supervising faculty mentor, and then rotated through service with several full-time faculty members to assist them with instruction in an introductory studio art class. Emphasis is on planning, delivering, and assessing instruction in art.

**FNAR 595. Advanced Topics in Art (Credit varies)**

*Prerequisite: Enrollment in the MAT Program or consent of the instructor.*

Course topics are selected on the basis of faculty and student interests. Students may take a maximum of 3 credit hours of a topics course in a given semester, and a maximum of 9 credit hours in their total academic program. If more than 9 credit hours are taken, only the last 9 count toward the degree.

**FNAR 599. Independent Study (1-3 Credits)**

*Prerequisite: Enrollment in the MAT Program or consent of instructor.*

Qualified students may enrich their program through directed reading or independent research under faculty supervision and for University credit. Goals, prerequisites, stages and grading are agreed upon in writing by the faculty member and the student and are submitted for approval prior to enrollment. See page 19 for specific instructions and procedures.

**GEOGRAPHY****GEOG 570. World Geography for Teachers (3-3-0)**

*Prerequisite: Enrollment in the MAT Program or consent of instructor.*

This course has two major purposes: 1) to enhance (future) teachers' abilities to find and assess learning resources for secondary-level world geography and 2) to enhance (future) teachers' content knowledge of world geography. The course begins with a survey of core geographic ideas, the key learning objectives in geographic education. The latter half of the course is devoted to finding and appraising resources for geographic learning and instruction. The capstone project is a learning resources portfolio covering a particular world region.

**HISTORY****HIST 510. The American Historian as Teacher (3-3-0)**

*Prerequisite: Enrollment in the MAT Program or consent of instructor.*

The primary focus of this graduate seminar is to prepare students who will pursue a career in teaching history and social studies. To that end, the seminar will examine themes in American history from many different perspectives (e.g., political, economic, social, and cultural), but the specific focus, form and content of each seminar will be determined by the instructor. Previous subjects have included the colonial period, slavery, women's rights, and the Vietnam War. All seminars will deal with selected problems in history and an examination of historiography, methodology and philosophy of history. Seminar discussions and research projects revolve around primary and secondary sources, monograph and academic articles, competing interpretation of historical events, and communicating lessons to future students. As areas of study vary on a regular basis, this course may be repeated for credit.

**HIST 530. The World Historian as Teacher (3-3-0)**

*Prerequisite: Enrollment in the MAT Program or consent of instructor.*

The primary focus of this graduate seminar is to prepare students who will pursue a career in teaching history and social studies. To that end, the seminar will examine themes in non-western world history from many different perspectives (e.g., political, economic, social, and cultural), but

the specific focus, form and content of each seminar will be determined by the instructor. Regions covered may be Asia, Africa, Latin America, and Middle East. All seminars will deal with selected problems in history and an examination of historiography, methodology and philosophy of history. Seminar discussions and research projects revolve around primary and secondary sources, monograph and academic articles, competing interpretation of historical events, and communicating lessons to future students. As areas of study vary on a regular basis, this course may be repeated for credit.

### **HIST 570. Methods for Teaching and Assessing Social Studies (3-3-0)**

*Prerequisite: Enrollment in the MAT Program or consent of instructor.*

Social studies education is a powerful tool, not only in the development of democratic behavior, but also in the promotion of understanding multiculturalism and the complex global issues shaping the world today. This course is designed to help prospective social studies teachers turn theory into successful practice in daily instruction. Students will learn best practices in instructional methodology; explore the purposes of social studies education; build upon past course work to engage students; apply a variety of effective instructional models as part of unit design; develop methods of assessment for instructional planning; and practice the language to communicate their teaching philosophy and instructional choices.

### **HIST 595. Advanced Topics in History (Credit varies)**

*Prerequisite: Enrollment in the MAT Program or consent of instructor.*

Course topics are selected on the basis of faculty and student interests. Students may take a maximum of 3 credit hours of a topics course in a given semester, and a maximum of 9 credit hours in their total academic program. If more than 9 credit hours are taken, only the last 9 count toward the degree.

### **HIST 599. Independent Study (1-3 Credits)**

*Prerequisite: Enrollment in the MAT Program or consent of instructor.*

Qualified students may enrich their program through directed reading or independent research under faculty supervision and for University credit. Goals, prerequisites, stages and grading are agreed upon in writing by the faculty member and the student and are submitted for approval prior to enrollment. See page 19 for specific instructions and procedures.

## **MATHEMATICS**

### **MATH 538. Apprenticeship in Teaching Mathematics (3-2-1)**

*Prerequisite: Enrollment in the MAT Program or consent of instructor. (Fall)*

The purpose of the course is to have students work with high school students and lower-level college students in understanding and mastering basic mathematics concepts. Students are assigned tutorial activities such as observing, analyzing class responses and assisting in class work. This includes administering individual and group tutoring sessions, submitting a log of interactions and writing a research paper about how students learn mathematics.

### **MATH 555. Pedagogy, Assessment, and Research for Secondary Math Teacher (3-3-0)**

*Prerequisite: Enrollment in the MAT Program or consent of the instructor. (Spring)*

This course focuses on further developing and refining the mathematical knowledge necessary for teaching secondary mathematics; both content knowledge and pedagogical content knowledge. In this course research concerning student learning, pedagogy, and assessment, specifically focusing on mathematics, is explored. This course provides students with opportunities that support their development of creative instructional and assessment approaches that are meaningful, pedagogically sound, and mathematically correct.

### **MATH 570. The Teaching of Elementary Mathematics (3-3-0)**

*Prerequisite: Enrollment in the MAT Program or consent of the instructor. (Fall)*

This course focus is on the methodology necessary for teaching elementary school mathematics based on current understanding and insights of how children learn mathematics. Teacher candidates develop creative instructional approaches that are meaningful and mathematically correct and which instill student enthusiasm and satisfaction in learning and using mathematics. Includes a 12-hour field experience.

### **MATH 595. Advanced Topics in Mathematics (Credit varies)**

*Prerequisite: Enrollment in the MAT Program or consent of the instructor.*

Course topics are selected on the basis of faculty and student interests. Students may take a maximum of 3 credit hours of a topics course in a given semester, and a maximum of 9 credit hours in their total academic program. If more than 9 credit hours are taken, only the last 9 count toward the degree.

**MATH 599. Independent Study (1-3 Credits)**

*Prerequisite: Enrollment in the MAT Program or consent of instructor.*

Qualified students may enrich their program through directed reading or independent research under faculty supervision and for University credit. Goals, prerequisites, stages and grading are agreed upon in writing by the faculty member and the student and are submitted for approval prior to enrollment. See page 19 for specific instructions and procedures.

**MODERN LANGUAGES****MLAN 511. Advanced Strategies in TESOL**

**[Same as ENGL 511] (3-3-0)**

*Prerequisite: Enrollment in the MAT Program or consent of instructor. (Spring, Summer)*

This course is a graduate seminar that examines methods of teaching English to speakers of other languages (TESOL). Students learn about the cognitive, affective, linguistic and sociocultural processes involved in second language development and acquire the ability to critically evaluate and develop teaching methods and materials. A field component of 10 to 12 hours is required.

**MLAN 570. Teaching Modern Languages (3-3-0)**

*Prerequisite: Enrollment in the MAT Program or consent of instructor. (Fall)*

Students use their world language and cultural knowledge to plan and deliver lessons; create classroom experiences appropriate to the needs of learners; develop effective strategies for teaching world languages in meaningful contexts; collaborate with peers in reflection on the teaching/learning process and in planning lessons; and develop an awareness of the responsibilities of a language educator.

**MUSIC COURSES****APP COND 531. Applied Choral Conducting (1-0-.5)**

*Prerequisite: Music education major pursuing the MAT degree. (Fall)*

The study of applied choral conducting at the graduate level is to develop further the synthesis of baton technique, rehearsal technique, expression and scholarship. Through weekly practice with the CNU Chamber Choir; conducting on concerts and recitals; attending master classes, recitals, and concerts; listening to recordings; and reading articles and books on conducting and pedagogy, a student will have the opportunity to improve technique and performance and achieve a greater musical and historical understanding of the repertoire. An applied music fee is charged each semester (see fees and financial information).

**APP COND 531. Applied Orchestral Conducting (1-0-.5)**

*Prerequisite: Music education major pursuing the MAT degree. (Fall)*

The study of applied orchestral conducting at the graduate level is to develop and further the synthesis of baton technique, rehearsal technique, expression, and scholarship. Through weekly practice with the CNU Orchestra; conducting of concerts and recitals; attending master classes, recitals, and concerts; listening to recordings; and reading articles and books on conducting and pedagogy, a student will have the opportunity to improve technique and performance and achieve a greater musical and historical understanding of the repertoire. An applied music fee is charged each semester (see fees and financial information).

**APP COND 531. Applied Wind Conducting (1-0-.5)**

*Prerequisite: Music education major pursuing the MAT degree. (Fall)*

The study of applied wind conducting at the graduate level is to develop further the synthesis of baton technique, rehearsal technique, expression and scholarship. Through weekly practice with the CNU Wind Ensemble; conducting of concerts and recitals; attending master classes, recitals, and concerts; listening to recordings; and reading articles and books on conducting and pedagogy, a student will have the opportunity to improve technique and performance and achieve a greater musical and historical understanding of the repertoire. An applied music fee is charged each semester (see fees and financial information).

**APP COND 533- Applied Music: Conducting (2-0-1)**

*Prerequisite: Music education major pursuing the MAT degree.*

The study of applied music at the graduate level is to develop further the synthesis of technique, expression, repertoire and performance. Through weekly, 50-minute lessons, intense study of selected repertoire, and performance, the student will continue to develop the knowledge and skills expected of a professional musician. The course is of particular value to music pedagogues desiring to become more distinguished performers. An applied music fee is charged each semester (see fees and financial information).

**APP MUSC 531. Applied Music (1-0-.5)**

*Prerequisite: Music education major pursuing the MAT degree. (Fall)*

The study of applied music at the graduate level is to develop further the synthesis of technique, expression, repertoire and performance. Through weekly, 30-minute lessons, intense study of selected repertoire, and performance, the student will continue to develop the knowledge and skills expected of a professional musician. The course is of particular value to music pedagogues desiring to become more distinguished performers.

**MUSC 510. Foundations of Music Education (3-3-0)**

*Prerequisite: Music education major pursuing the MAT degree. (Fall)*

This is a comprehensive course focusing on the instruction in K-12 music programs from a philosophical, historical, and curricular perspective. Methods and materials for teaching are discussed and experienced through reading, writing and applications to curricular planning. The course also includes techniques and methods of measuring and evaluating musical behaviors in cognitive, affective and psychomotor domains.

**MUSC 517 Secondary Instrumental Methods (3-3-0)**

*Prerequisites: MAT instrumental music education major. (Spring)*

This course addresses the methods, planning materials, and pedagogical techniques for teaching instrumental music on the secondary level. Students will study how to align curriculums to state and national standards and to develop programs that promote comprehensive musicianship through instrumental performance. This class would also devote a portion of time to an introduction to developing specialty programs such as marching bands and alternative string groups. A portion of this class is devoted to in class lab experiences and field placements to promote the practical application of teaching skills with secondary level students.

**MUSC 518 Secondary Choral Methods (3-3-0)**

*Prerequisites: MAT choral music education major. (Spring)*

This course addresses the methods, planning, materials, and pedagogical techniques for teaching choral music on the secondary level. Students will study how to align curriculums to state and national standards and to develop programs that promote comprehensive musicianship through choral performance. This class would also devote a portion of time to an introduction to developing specialty programs such as jazz choirs and madrigal groups. A portion of this class is devoted to in-class lab experiences and field placements to promote the practical application of teaching skills with secondary level students

**MUSC 520. Choral Literature and Conducting [Meets with MUSC 420] (3-3-0)**

*Prerequisite: MUSC 310, 312 and 314; choral music education major pursuing the MAT degree or consent of the instructor. (Spring)*

A survey course that requires historical and structural analysis and conducting of major choral literature from the Renaissance to the present. Students conduct live ensembles both in the classroom and in the rehearsal hall. Special emphasis is placed on major works, composers, compositional styles, analysis, programming, error detection, and conducting. Students read and discuss a variety of material to develop the knowledge and pedagogical skills necessary to become effective teachers, scholars and musicians. A major research paper and presentation are required. Substantive, additional work in the form of more advanced assignments and projects are required to distinguish this class from the cross-listed course.

**MUSC 530. Wind Literature and Conducting [Meets with MUSC 430] (3-3-0)**

*Prerequisite: MUSC 310, 312 and 316; instrumental music education major with an emphasis in band pursuing the MAT degree or consent of the instructor. (Spring)*

A comprehensive study of wind groups focusing on instrumentation and literature from the earliest beginnings to the present. Special emphasis on major works, composers, stylistic changes, programming and conducting. Students read and discuss a variety of material to develop the knowledge and pedagogical skills necessary to become effective teachers, scholars and musicians. A major research paper and presentation are required. Students conduct live ensembles both in the classroom and in the rehearsal hall. The course is required for the Master of Arts in Teaching degree with a concentration in instrumental music education with an emphasis in band.

**MUSC 537. Music in the Elementary Schools (3-3-0)**

*Prerequisite: Music education major pursuing the MAT degree. (Fall)*

Fundamental procedures of and experiences in teaching elementary school music, stressing music materials suitable for the first six grades. Methods discussed and practiced include those of Orff, Kodaly, Suzuki, Manhattanville and Dalcroze. An introduction to fretted instruments and recorders is also included. Students read and discuss a variety of material to develop the knowledge and pedagogical skills necessary to become effective teachers, scholars and musicians. A major research paper and presentation are required.

**MUSC 540. Orchestral Literature and Conducting [Meets with MUSC 440] (3-3-0)**

*Prerequisite: MUSC 310, 312 and 316; instrumental music education major with an emphasis in orchestra pursuing the MAT degree or consent of the instructor. (Spring)*

A comprehensive study of orchestral groups focusing on instrumentation and literature from the earliest beginnings to the present. Special emphasis on major works, composers, stylistic changes, programming and conducting. Students read and discuss a variety of material to develop the knowledge and pedagogical skills necessary to become effective teachers, scholars and musicians. A major research paper and presentation are required. Students conduct live ensembles both in the classroom and in the rehearsal hall. Substantive, additional work in the form of more advanced assignments and projects are required to distinguish this class from the cross-listed course.

**MUSC 545 Contemporary Skills and Issues (3-3-0)**

*Prerequisites: MUSC 517 or 518; MAT music education major. (Fall)*

This course addresses contemporary issues in music education related to the design of relevant curricula for adolescents who are not involved in traditional school performance ensembles. Students are introduced to curriculum design for secondary general music, informal music-making programs, music production and business

coursework, and improvisation/composition programs. A focus of the course is the design of assignments and tasks that are relevant, sequential, and motivating for future musical engagement as well as enhance musical and language literacy and comprehension

### **MUSC 570. Marching Band Techniques (1-1-0)**

*Prerequisite: MUSC 310, 312 and 316; instrumental music education major pursuing the MAT degree or consent of the instructor. (Fall)*

Techniques and methods for organizing, programming, rehearsing, teaching and arranging music for a marching band. Computer-assisted drill design is a major component of this course. A comprehensive notebook and extensive outside readings and viewings or videos are required.

### **MUSC 580. Jazz Ensemble Techniques (1-1-0)**

*Prerequisite: Enrollment in the MAT Program or consent of instructor. (Fall)*

Techniques and methods for organizing, programming, rehearsing and teaching improvisation in a school jazz band and choral setting. A comprehensive notebook and extensive outside readings and listening examples are required in addition to 10 hours of field observation and participation in the public schools.

### **MUSC 595. Advanced Topics in Music (Credit varies)**

*Prerequisite: Enrollment in the MAT Program in Choral Music Education or consent of instructor.*

Course topics are selected on the basis of faculty and student interests. Students may take a maximum of 3 credit hours of a topics course in a given semester, and a maximum of 9 credit hours in their total academic program. If more than 9 credit hours are taken, only the last 9 count toward the degree.

### **MUSC 599. Independent Study (1-3 Credits)**

*Prerequisite: Enrollment in the MAT Program or consent of instructor.*

Qualified students may enrich their program through directed reading or independent research under faculty supervision and for University credit. Goals, prerequisites, stages and grading are agreed upon in writing by the faculty member and the student and are submitted for approval prior to enrollment. See page 19 for specific instructions and procedures.

## NATURAL SCIENCE COURSES

### **NSCI 570. Teaching STEM (3-3-0)**

*Prerequisite: Enrollment in MAT program.*

This course is a graduate level seminar in which the students and instructor utilize a variety of learning techniques to explore current and practical methods of STEM (Science, Technology, Engineering and Mathematics) education. The instructor will act as a facilitator and co-learner in

this process, and an important component of the course is to identify and explore issues of particular interest to the students enrolled in the class.

## PHYSICS

### **PHYS 501. Models of Dynamical Systems (3-3-0)**

*Prerequisites: Math through differential equations or permission of the instructor. (Fall)*

The classical models of physical phenomena, the modern perspective on their analytic and qualitative solutions and the insights that numerical analysis of the models gives to expected behaviors of dynamical systems. Computer analysis and graphical representation of solutions for regular and chaotic dynamical systems.

### **PHYS 502. Quantum Physics (3-3-0)**

*Prerequisites: PHYS 501 or permission of instructor. (Spring)*

Study of the formulation of quantum physics and the use of computers to analyze quantum mechanical systems. Topics include the postulates of quantum physics, the Schrödinger equation, indeterminacy, the Heisenberg representation, angular momentum, internal degrees of freedom, the hydrogen atom, perturbation theory, quantization of the EM field and radiative transitions.

### **PHYS 504. Electromagnetic Theory (3-3-0)**

*Prerequisites: PHYS 304 or MATH 350 or permission of instructor. (Spring)*

Review of electrostatics and magnetostatics. Maxwell's equations and time varying fields: wave propagation and polarization, waveguides and cavities and radiating systems. Computer programs for the solution of problems will be emphasized.

### **PHYS 506. Thermodynamics and Statistical Physics [Meets with PHYS 406] (3-3-0)**

*Prerequisites: Graduate standing within the department or permission of instructor. (Spring)*

Review of thermodynamics followed by advanced topics in thermodynamics: first-order phase transitions, maximum work theorem, Legendre transformations, critical phenomena and irreversible thermodynamics. Statistical mechanics: entropy representation, microcanonical, canonical, grand canonical formalisms, quantum fluids and fluctuations. Use of the computer in the analysis and presentation of technical problems.

### **PHYS 521. Computer Architecture [Same as CPSC 521; meets with CPEN 414] (3-3-0)**

*Prerequisites: Graduate standing within the department or permission of instructor. (Spring)*

Advanced issues and techniques in computer architecture and design. Instruction set design and performance impact. Architectural simulation using VERILOG. Pipelining. Com-

puter arithmetic and vector processors. Advanced memory and cache design. I/O interfaces for high performance.

### **PHYS 522. Microprocessor-based Systems**

**[Meets with CPEN 422] (3-3-0)**

*Prerequisites: Graduate standing in the department or permission of the instructor. (Fall)*

Focus on microprocessor-based computer architectures. Hardware topics include studies of several microprocessor architectures, memory, peripheral interfaces and buses. Software issues include I/O and interrupt handling and microprocessor development systems.

### **PHYS 531. Optical Physics**

**[Meets with PHYS 431] (3-3-0)**

*Prerequisites: Graduate standing in the department or permission of the instructor.*

This course lays the foundation of modern optical science. It presents an overview of the properties of light and its interaction with matter and describes basic principles for control and detection of light beams. Provides an introduction to optical spectroscopy. The use of computer software for optical analysis is emphasized.

### **PHYS 541. Modeling and Simulation**

**[Meets with PHYS 441] (3-3-0)**

*Prerequisites: PHYS 501, PHYS 502, MATH 580, CPSC 501, C or FORTRAN 90.*

The modeling and simulation of physical systems. Applying software methodologies to the solution of physical problems. Lectures typically involve a short review of a physics topic such as Keplerian motion, followed by an extensive discussion on the modeling and/or simulation of the problem. A large component of the course is a project. Students are able to “design” their own project, drawing from any area in the complete spectrum of physics curriculum. The project might entail modeling physical systems (ex: mechanics, optics, fluids, waveguides, atmospheric propagation or nonlinear system). Or, the student may choose to write a stimulation (ex: interplanetary spaceflight, orbital adjustment and insertion or powered flight). Substantive, additional work in the form of more advanced assignments and projects are required to distinguish this class from the cross-listed class.

### **PHYS 595. Advanced Topics in Physics (Credit varies)**

*Prerequisite: Enrollment in the MAT Program or consent of instructor.*

Course topics are selected on the basis of faculty and student interests. Students may take a maximum of 3 credit hours of a topics course in a given semester, and a maximum of 9 credit hours in their total academic program. If more than 9 credit hours are taken, only the last 9 count toward the degree.

### **PHYS 599. Independent Study (1-3 Credits)**

*Prerequisite: Enrollment in the MAT Program or consent of instructor.*

Qualified students may enrich their program through directed reading or independent research under faculty supervision and for University credit. Goals, prerequisites, stages and grading are agreed upon in writing by the faculty member and the student and are submitted for approval prior to enrollment. See page 19 for specific instructions and procedures.

### **PHYS 621. Digital Signal Processing (3-3-0)**

*Prerequisites: PHYS 503, PHYS 522. (Odd Year Fall)*

This course covers the principles of digital signal processing beginning with the sampling process on through digital filter design. Advanced topics include approximation effects, inverse filtering and hardware implementation structures. The course correlates theoretical aspects presented in the classroom with practical experimentation and design in a laboratory setting using commercial DSP hardware.

### **PHYS 631. Physics of Solids (3-3-0)**

*Prerequisites: PHYS 502 and PHYS 506 or permission of instructor.*

Introduction to the physics of solids at the graduate level. Quantum ideas are emphasized to provide a better understanding of the properties of solids. Topics include crystal structure, electrons in a periodic potential, Fermi surface and band theory, lattice dynamics, phonons, semiconductors and magnetism.

### **PCSE 503. Data Acquisition (3-3-0)**

*Prerequisites: Graduate standing within the department or permission of instructor. (Even Year Fall)*

Data reduction and error analysis. Computer-controlled data acquisition systems in the laboratory. The use of a case study to develop a measurement system. Noise in electronic systems. Introduction to signal processing. Students are required to complete a project that includes an implementation of a measurement system and data reduction of the results.

### **PCSE 572. Introduction to Robotics (3-3-0)**

**[Same as CPSC 472] (Spring)**

*Pre-requisite Courses: Graduate standing in MSAPCS (Assumes coursework in linear algebra and programming)*

This course presents an overview of applied robotics. The course will cover introductions to configuration space representations, rigid body transforms in 2D and 3D, robot kinematics, basic control theory, motion planning, perception, and machine decision making. Perception topics include basic computer vision and laser rangefinder (LIDAR)-based obstacle detection and mapping. The course includes hands on development and system integration using various robotic platforms. Programming will be done in Ubuntu Linux in a mixture of C++ and Python; no prior experience is required, but students will be expected to self-teach the specifics necessary to complete the projects.

**PCSE 579. Problem Solving and Public Presentation (1-1-0)**

This is an interdisciplinary seminar course on problem-solving and public presentation. Students are required to solve problems through integration and extension of previous coursework, and to present solutions to the class, which includes students from other specialties. Problems are from various sources including instructor developed, the GRE, Ph.D. qualifying examinations from other universities, and published challenge problems. Grades are based on problem solutions and the clarity and organizations of the write-up and presentation. There is an element of anonymous peer-review.

**PCSE 699. Thesis Research (9 Credits)**

Thesis Research may be taken in one-credit increments. Students are required to enroll in one credit hour of PCSE 699 during any semester in which they are working on the thesis and must enroll in at least one thesis credit hour during the semester of degree completion.

**PSYCHOLOGY****PSYC 521. Reading Acquisition and Development (3-3-0) [Same as TCHG 521].**

*Restricted to MAT Program students. Prerequisite: ENGL 310, OR a comparable linguistics course, OR successful completion of CNU's Linguistics Competency Assessment. Corequisite: PSYC 521L. (Fall, Spring)*

This course examines theories, principles, strategies and research related to reading acquisition and development in children from preschool through elementary grades. The developmental nature of reading acquisition and the application of current reading research to instructional practice will be emphasized. Topics covered will include theories and scientific foundations for reading instruction; research-based instruction in phonemic awareness, systematic phonics, fluency, vocabulary, and reading comprehension; reading difficulties, including dyslexia, specific reading comprehension deficits, executive skill deficits, and readers on the autism spectrum; English learners and speakers of different dialects of English. Assessment, differentiation, and multi-tiered systems of support will be addressed.

**PSYC 521L. Reading Acquisition and Development Laboratory (1-0-3)**

*Prerequisite: Enrollment in the MAT Program or consent of instructor. Pre or corequisite: PSYC 521. (Fall, Spring)*

This course accompanies PSYC 521, Reading Acquisition and Development. PSYC 521 is designed to provide pre-service teachers a strong theoretical and empirical (research) foundation for understanding the reading acquisition process and one on which to base sound reading instructional practice. The laboratory is designed to provide pre-service teachers the opportunity to apply reading theory and research to successful instructional practice in structured field experiences and reflective analyses of those experiences. Field hours are required.

**PSYC 535. Exceptional Learner (3-3-0)**

**[Same as TCHG 535]**

*Prerequisite: Enrollment in the MAT Program or consent of instructor. (Fall, Spring, Summer)*

This course provides prospective teachers with a basic understanding of special education, its terminology, legal mandates, the etiology and characteristics of exceptionality, and various strategies for educating students with diverse learning needs. Specifically, students are introduced to appropriate educational interventions related to learning disabilities, mental retardation, emotional disturbance, attention-deficit/hyperactivity disorder, autism, developmental delays, speech or language impairment, hearing impairment, visual impairment, physical disabilities, chronic health conditions, traumatic brain injuries, and giftedness.

**PSYC 544. Assessment of Learning**

**(3-3-0) [Same as TCHG 544]**

*Prerequisite: Enrollment in the MAT Program or consent of instructor. (Fall, Spring)*

This course is designed to develop competence in constructing and employing valid and reliable assessments of student achievement in the K-12 classroom. Specifically, students are introduced to such topics as constructing well-designed assessments based on curricular goals, interpreting test results, effectively communicating results, and using assessment data to inform instruction.

**PSYC 595. Advanced Topics in Psychology (Credit varies)**

*Prerequisite: Enrollment in the MAT Program or consent of instructor.*

Course topics are selected on the basis of faculty and student interests. Students may take a maximum of 3 credit hours of a topics course in a given semester, and a maximum of 9 credit hours in their total academic program. If more than 9 credit hours are taken, only the last 9 count toward the degree.

**PSYC 599. Independent Study (1-3 Credits)**

*Prerequisite: Enrollment in the MAT Program or consent of instructor.*

Qualified students may enrich their program through directed reading or independent research under faculty supervision and for University credit. Goals, prerequisites, stages and grading are agreed upon in writing by the faculty member and the student and are submitted for approval prior to enrollment. See page 19 for specific instructions and procedures.

**SOCIOLOGY****SOCL 501. Multiculturalism, Diversity & Education (3-3-0)**

*Prerequisite: Enrollment in the MAT Program or consent of instructor. (Summer, Fall)*

This course addresses the sources and consequences of racial, ethnic, class and gender diversity in the United States with special attention to the implications for education and the public school system. Topics include bilingual

education; the relationships between inequalities of race, ethnicity and class and education; immigration and the schools; affirmative action; racism; and sexism.

**SOCL 595. Advanced Topics in Sociology (Credit varies)**

*Prerequisite: Enrollment in the MAT Program or consent of instructor.*

Course topics are selected on the basis of faculty and student interests. Students may take a maximum of 3 credit hours of a topics course in a given semester, and a maximum of 9 credit hours in their total academic program. If more than 9 credit hours are taken, only the last 9 count toward the degree.

**SOCL 599. Independent Study (1-3 Credits)**

*Prerequisite: Enrollment in the MAT Program or consent of instructor.*

Qualified students may enrich their program through directed reading or independent research under faculty supervision and for University credit. Goals, prerequisites, stages and grading are agreed upon in writing by the faculty member and the student and are submitted for approval prior to enrollment. See page 19 for specific instructions and procedures.

**SPANISH**

**SPAN 538. Apprenticeship in Teaching Spanish (3-3-0)**

*Prerequisite: Enrollment in the MAT Program or consent of instructor. (Fall)*

This course introduces prospective teachers to the skills necessary to plan, implement and evaluate effective lessons in the area of Spanish instruction. A significant field component is required.

**SPAN 599. Independent Study (1-3 Credits)**

*Prerequisite: Enrollment in the MAT Program or consent of instructor.*

Qualified students may enrich their program through directed reading or independent research under faculty supervision and for University credit. Goals, prerequisites, stages and grading are agreed upon in writing by the faculty member and the student and are submitted for approval prior to enrollment. See page 19 for specific instructions and procedures.

**TEACHING AND LEARNING**

**TCHG 510. Teaching Internship (8-0-24)**

*Prerequisite: Enrollment in the MAT program or consent of instructor. (Spring)*

A full-time, 14 week clinical teaching experience in the public schools.

**TCHG 511. Teaching Internship I (4-0-12)**

*Prerequisite: Enrollment in the MAT program or consent of instructor. (Spring)*

The student teaching internship I is a six to eight-week hands-on field experience that brings together both univer-

sity preparation and the Virginia public school classroom. It is the final step in supporting teacher candidates' entry into the professional world of education.

**TCHG 512. Teaching Internship Abroad (4-0-12)**

*Corequisite: TCHG 511. (Spring)*

The student teaching internship abroad is a four to six-week hands-on field experience in an overseas setting that brings together both university preparation and the K-12 school classroom. Together with TCHG 511, TCHG 512 is the final step in supporting teacher candidates' entry into the professional world of education.

**TCHG 516. Curriculum and Instruction I (2-2-0)**

*Prerequisite: Enrollment in the MAT Program or consent of instructor. (Summer)*

This course teaches prospective teachers those curriculum and instructional methodologies that are appropriate to the needs of today's students. Emphasis is placed on the acquisition of skills essential for teacher decision-making in the areas of instructional planning, lesson design, and delivery of instruction. Special attention is paid to the research on effective instructional strategies. A key requirement of the course is microteaching simulations that are evaluated by the instructor and student's peers. This course has separate sections for elementary and middle/secondary.

**TCHG 517. Curriculum and Instruction II (1-1-0)**

*Prerequisite: TCHG 516. Enrollment in the MAT Program or consent of instructor. (Summer)*

This course is designed to continue to teach prospective teachers those curriculum and instructional methodologies that are appropriate to the needs of today's students. Emphasis is placed on the acquisition of skills essential for teacher decision-making in the areas of instructional planning, lesson design, and delivery of instruction, motivation and assessment. A key requirement of the course is microteaching simulations that are evaluated by the instructor and student's peers. This course has separate sections for elementary and middle/secondary.

**TCHG 518L. Secondary and PK-12 Field Practicum (1-0-3)**

*Prerequisite: Enrollment in the MAT Program or consent of instructor.*

This course is designed to give teacher candidates wishing to teach middle or high school hands-on experience in secondary classrooms. Emphasis is placed on acquisition of skills necessary for effective implementation of planning, instruction and assessment. Key requirements of the course are attending practicum meetings and completing teaching tasks within the assigned school placement. Three hours per week of clinical work is expected.

**TCHG 521. Reading Acquisition and Development (3-3-0) [Same as PSYC 521].**

*Restricted to MAT Program students. (Fall, Spring) Corequisite: PSYC 521L*

This course examines theories, principles, strategies and research related to reading acquisition and development in children from preschool through elementary grades. The developmental nature of reading acquisition and the application of current reading research to instructional practice will be emphasized. Topics covered will include theories of reading development; skills-based, holistic and balanced approaches to reading instruction; the application of empirical research findings to reading instruction; language basics, including syllables, phonemes and morphemes; concepts of print; letter recognition; phonemic awareness; the alphabetic principle (sound-symbol knowledge); vocabulary, fluency, and comprehension strategies; the role of the family in reading acquisition; reading attitudes and motivation; and diverse learners.

**TCHG 521L. Reading Acquisition and Development Laboratory (1-0-3)**

*Pre or corequisite: PSYC 521.*

This course accompanies PSYC 521, Reading Acquisition and Development. PSYC 521 is designed to provide pre-service teachers a strong theoretical and empirical (research) foundation for understanding the reading acquisition process and one on which to base sound reading instructional practice. The laboratory is designed to provide pre-service teachers the opportunity to apply reading theory and research to successful instructional practice in structured field experiences and reflective analyses of those experiences.

**TCHG 535. Exceptional Learner (3-3-0) [Same as PSYC 535]**

*Prerequisite: Enrollment in the MAT Program or consent of instructor. (Fall, Spring, Summer)*

This course provides prospective teachers with a basic understanding of special education, its terminology, legal mandates, the etiology and characteristics of exceptionality, and various strategies for educating students with diverse learning needs. Specifically, students are introduced to appropriate educational interventions related to learning disabilities, mental retardation, emotional disturbance, attention-deficit/hyperactivity disorder, autism, developmental delays, speech or language impairment, hearing impairment, visual impairment, physical disabilities, chronic health conditions, traumatic brain injuries, and giftedness.

**TCHG 543. Classroom Management and Discipline (2-2-0)**

*Prerequisite: Enrollment in the MAT Program or consent of instructor. (Summer)*

The course addresses components of successful classroom management, including managing the physical environment, student behavior, instruction and student productiv-

ity. A number of discipline approaches will be presented. Emphasis is on research proven to effect productive classroom behaviors.

**TCHG 544. Assessment of Learning [Same as PSYC 544] (3-3-0)**

*Prerequisite: Enrollment in the MAT Program or consent of instructor. (Fall, Spring)*

This course is designed to develop competence in constructing and employing valid and reliable assessments of student achievement in the K-12 classroom. Specifically, students are introduced to such topics as constructing well-designed assessments based on curricular goals, interpreting test results, effectively communicating results, and using assessment data to inform instruction.

**TCHG 550. Teaching Across Cultures (3-2-1)**

*Prerequisite: Enrollment in the MAT Program or consent of instructor.*

This course is a two-week study abroad experiential course, tied to a graduate seminar, that examines issues involved in educating students in a context other than the United States. Students learn about the culture of the country under study, and how it impacts the educational goals, pedagogy and materials used in the schools. Comparison and contrast between the country's education and that of the United States will be examined.

**TCHG 580. Technology for Teachers (1-1-0)**

*Prerequisite: CPSC 110 or equivalent. (Spring)*

This course addresses instructional technology required for the K-12 classroom. Issues, skills and strategies associated with instructional technology are introduced. Experience involving practical application of instructional technology in the classroom is gained throughout the course. There are separate sections for elementary and secondary candidates.

**TCHG 595. Advanced Topics in Teaching (Credit varies)**

*Prerequisite: Enrollment in the MAT Program or consent of instructor.*

Course topics are selected on the basis of faculty and student interests. Students may take a maximum of 3 credit hours of a topics course in a given semester, and a maximum of 9 credit hours in their total academic program. If more than 9 credit hours are taken, only the last 9 count toward the degree.

**TCHG 599. Independent Study (1-3 Credits)**

*Prerequisite: Enrollment in the MAT Program or consent of instructor.*

Qualified students may enrich their program through directed reading or independent research under faculty supervision and for University credit. Goals, prerequisites, stages and grading are agreed upon in writing by the faculty member and the student and are submitted for approval prior to enrollment. See page 19 for specific instructions and procedures.

**Family Educational Rights and  
Privacy Act  
(FERPA)**

Listed below is the annual notification of the Family Educational Rights and Privacy Act of 1974 (FERPA). The University is required to inform enrolled students annually of their rights under the terms of FERPA. The act does not apply to students admitted to the University who have not officially enrolled. An admitted student is determined to be enrolled upon their first day of classes at the University.

Note: Students should access [cnu.edu/registrar/ferpa](http://cnu.edu/registrar/ferpa) for the latest changes to CNU directory information and updates regarding the Family Educational Rights and Privacy Act of 1974 (FERPA). The Vice President for Enrollment and Student Success and the University Registrar serve as the University's FERPA officials and implement policies and procedures to facilitate compliance with this federal requirement.

**A. Policy Intent**

1. The University student (education) record policy is intended to conform with all state and federal statutes dealing with access to information held by an educational institution on present and former students.
2. The CNU student record policy is formulated to protect the privacy of student information that is maintained and yet provide access to student records for those having a legitimate educational interest in viewing such records. Regulations and procedures to ensure adequate protection of the student are provided in this policy.

**B. Student Rights under FERPA:**

1. Enrolled students have the right to refuse the designation of any or all of the types of information about the student as directory information. A written request must be submitted prior to the start of the fall or spring semester.
2. Enrolled students have the right to inspect their education record within 45 days of the request for inspection and are entitled to an explanation of any information therein. "Record" refers to those files and their contents that are maintained by official units of the University. Generally, students have the right to review any official record that the University maintains on that student. When access is permitted, documents will be examined only under conditions that will prevent unauthorized removal, alteration, or mutilation. Students must submit to the Office of the Registrar written requests that identify the record(s) they wish to inspect. A University official will make arrangements for access and notify the student of the time and place where the record(s) may be inspected.

If the University official to whom the request was submitted does not maintain the requested record(s), that official shall advise the student of the correct official to whom the request should be addressed.

3. Information to which the student does not have access is limited to the following:
  - a. Confidential letters and recommendations placed in the student's files before January 1, 1975, and those letters for which student has signed a waiver of their right of access. Letters of recommendation are removed from the Admissions files before the files are forwarded to the Office of the Registrar.
  - b. Parents' confidential financial statements.
  - c. Personal files and records of members of faculty or administrative personnel, which are in sole possession of the maker thereof.
  - d. Education records, which contain information about more than one student; in such cases, CNU will allow the inquiring student access to the part of the record, which pertains only to the inquiring student.
  - e. Records of the admissions offices concerning students admitted but not yet enrolled at the University.
  - f. Medical/psychological records used in connection with treatment of the student. A physician or psychologist of the student's choice may view such records.
  - g. University Police Department records, when utilized for internal purposes by this office in its official capacities.
4. Documents submitted to the University by or for the student will not be returned to the student. Normally, academic records received from other institutions will not be sent to third parties external to the University, nor will copies of such documents be given to the student. The student should request such records from the originating institution.
5. Students have the right to request an amendment of the education record that the student believes is inaccurate or misleading. Should a student believe their record is incorrect, they should write the University official responsible for the record, clearly identify the part of the record they want changed, and specify the information they feel is inaccurate or misleading. The official will respond within a reasonable period concerning their action. Should the student not be satisfied, a hearing may be requested of the Vice Provost for Enrollment and Student Success.

6. Students have the right to consent to disclosures of personally identifiable information contained in the student's education record, except to the extent that FERPA authorizes disclosure without consent (see C.3. below).
7. Students have the right to file a complaint with the US Department of Education concerning alleged failures by CNU to comply with the requirements of FERPA. The name and address of the office that administers FERPA is:

Family Policy Compliance Office  
US Department of Education  
600 Independence Avenue, SW  
Washington, DC 20202-4605

#### C. Access to Student Records by Others:

1. Disclosure of General Directory Information: Certain information may be released by the University without prior consent of the student if considered appropriate by designated school officials. Such information is defined as the following:
  - a. Student's name.
  - b. Date of birth.
  - c. Dates of attendance at the University, field of concentration, degrees, honors and awards.
  - d. Enrollment status – full-time or part-time.
  - e. Height and weight of members of athletic teams.
  - f. Participation in officially recognized activities.
2. Directory information will not be released for commercial purposes by administrative offices of the University under any circumstances. Students may request that directory information not be released by written request to the Office of the Registrar. The request must be submitted, in writing, prior to the start of fall or spring semesters. All other student information will be released only upon written request of the student, excepting those instances cited below.
3. Disclosure to members of the University community:
  - a. "School Official" is defined as a person employed by the University in an administrative, supervisory, academic or research, or any University employee operating in support of the University's overall mission and goals; a person or company with whom the University has contracted (such as attorney, auditor, or collection agent); or a person serving on the Board of Visitors.
  - b. A school official must have a legitimate educational interest in order to review an education record. A legitimate educational interest is the demonstrated 'need to know' and is further defined in the following manner: the information requested must be within the context of the responsibilities assigned to the School Official; the information sought must be used within the context of official University business, in support of the University's overall mission and goals, and not for purposes extraneous to the official's area of responsibility or extraneous to the University; information requested must be relevant and necessary to the accomplishment of some task or to making some determination within the scope of University employment or to assist in accomplishing the University's overall mission and goals. A school official is determined to have a legitimate educational interest if the official needs to review an education record or needs access to components of an education record in order to fulfill their professional responsibility.
  - c. Information requested by student organizations of any kind will be provided only when authorized by the Vice President of Student Affairs/Dean of Students.
  - d. Effective July 2008, the Commonwealth of Virginia required higher education institutions to release educational record information to parents of dependent children. This state legislation is allowable within the guidelines of FERPA. Students who are tax dependents of their parent(s) or legal guardian(s) may authorize the receipt of mid-term or final grades and/or academic transcripts by contacting the Office of the Registrar to complete the documentation necessary for this disclosure. Proof of tax dependency may be required.
4. Disclosure to parents and organizations providing financial support to a student: It is the University's policy to release the academic transcript to parents and/or organizations only upon the student's written request or authorization, a policy consistent with the University's interpretation of FERPA.
5. Disclosure to other educational agencies and organizations: Information may be released to another institution of learning, research organization, or accrediting body for legitimate educational reasons, provided that any data shall be protected in a manner that will not permit the personal identification of the student by a third party.
6. Disclosure to local, state, and federal governmental agencies: Government agencies are permitted access to student records only when auditing, enforcing, and/or evaluating sponsored programs. In such instances, such data may not be given to a third party and will be destroyed when no longer needed for audit, enforcement, and/or evaluative purposes.

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