

2001-2002

GRADUATE CATALOG



CHRISTOPHER NEWPORT
UNIVERSITY

WHERE STUDENTS COME FIRST



MASTER OF ARTS IN TEACHING-LANGUAGE ARTS • M.S. IN APPLIED PHYSICS AND COMPUTER SCIENCE-COMPUTER SCIENCE CONCENTRATION • M.S. IN ENVIRONMENTAL SCIENCE • M.S. IN APPLIED PSYCHOLOGY WITH A CONCENTRATION IN INDUSTRIAL/ORGANIZATIONAL PSYCHOLOGY • EXCELLENT IN INSTRUCTION • MASTER OF ARTS IN TEACHING-HISTORY • M.S. IN APPLIED PHYSICS AND COMPUTER SCIENCE-COMPUTER SYSTEMS ENGINEERING AND INSTRUMENTATION CONCENTRATION • MASTER OF ARTS IN TEACHING-SCIENCE • ADVANCED SCHOLARSHIP • MASTER OF ARTS IN TEACHING-MATHEMATICS • RESEARCH • MASTER OF ARTS IN TEACHING WITH LICENSURE-LANGUAGE ARTS • M.S. IN APPLIED PHYSICS AND COMPUTER SCIENCE-APPLIED PHYSICS • EDUCATIONAL AND PROFESSIONAL ENHANCEMENT • MASTER OF PUBLIC SAFETY LEADERSHIP

Academic Calendar

August 1
August 20
August 20-24
September 3
October 6
October 10
October 24
November 19
November 26
November 30
December 1
December 3-8
December 15

January 3
January 14
January 14-18
March 2
March 11
March 25
April 19
April 26
April 27
April 29- May 4
May 11

Term 2
May 7
May 17
May 23
May 24
Term 3
May 29
May 29-30
June 18
June 27
June 28
Term 4
May 29-30
May 29-31
July 4
July 9
July 29-August 1
July 31-August 6
Term 5
July 2
July 2-3
July 4
July 22
July 26
August 1

August 2

Fall 2001

Intent to Graduate form due to the Office of the Registrar for December 2001 Degree Completion

Classes Begin
Add/Drop Period
Labor Day - Classes Meet
Fall Recess begins after last class meets
Classes resume at 8:00 a.m.
Last Day to Withdraw Without Grade Penalty and change to Pass/Fail status
LAST DAY FOR THESIS FORMAT REVIEW
Thanksgiving Recess begins after last class meets
Classes resume at 8:00 a.m.
Thesis/Portfolio/Culminating Project FINAL COPY due by 2:00 p.m. to the Office of Graduate Studies for December 2001 Degree Completion
Classes end
Final Examinations
Winter Commencement

Spring 2002

Intent to Graduate form due to the Office of the Registrar for May or August 2002 Degree Completion

Classes begin
Add/Drop Period
Spring Recess begins after last class meets
Classes resume at 8:00 a.m.
Last Day to Withdraw Without Grade Penalty and change to Pass/Fail status
LAST DAY FOR THESIS FORMAT REVIEW
Thesis/Portfolio/Culminating Project FINAL COPY due by 2:00 p.m. to the Office of Graduate Studies for May 2002 Degree Completion
Classes end
Final Examinations
Spring Commencement

Summer 2002

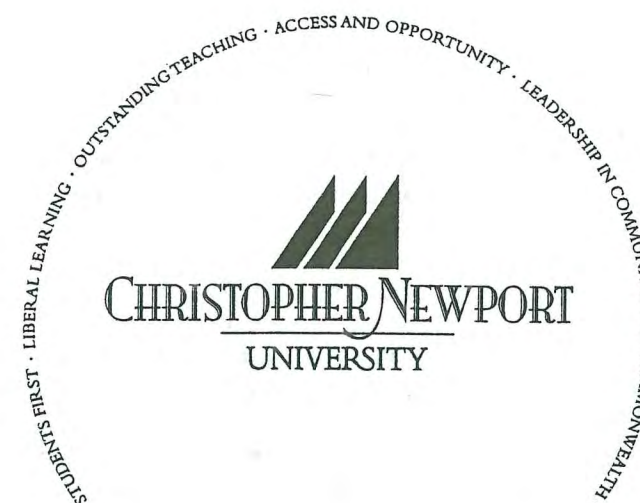
Classes Begin, Last day to Add/Drop and change to Audit status
Last Day to Withdraw Without Grade Penalty and change to Pass/Fail status
Classes End
Final Examinations

Classes Begin
Add/Drop Period
Last Day to Withdraw Without Grade Penalty and change to Pass/Fail status
Classes End
Final Examinations

Classes Begin
Add/Drop Period
Holiday: No classes
Last Day to Withdraw Without Grade Penalty and change to Pass/Fail status
Classes End
Final Examinations

Classes Begin
Add/Drop Period
Holiday: No classes
Last Day to Withdraw Without Grade Penalty and change to Pass/Fail status
LAST DAY FOR THESIS FORMAT REVIEW
Intent to Graduate form due to the Office of the Registrar for December 2002 Degree Completion
Classes End
Thesis/Portfolio/Culminating Project FINAL COPY due by 2:00 p.m. to Office of Graduate Studies for August 2002 Degree Completion
Final Examinations

2001-2002 Graduate Catalog



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University Catalog Information

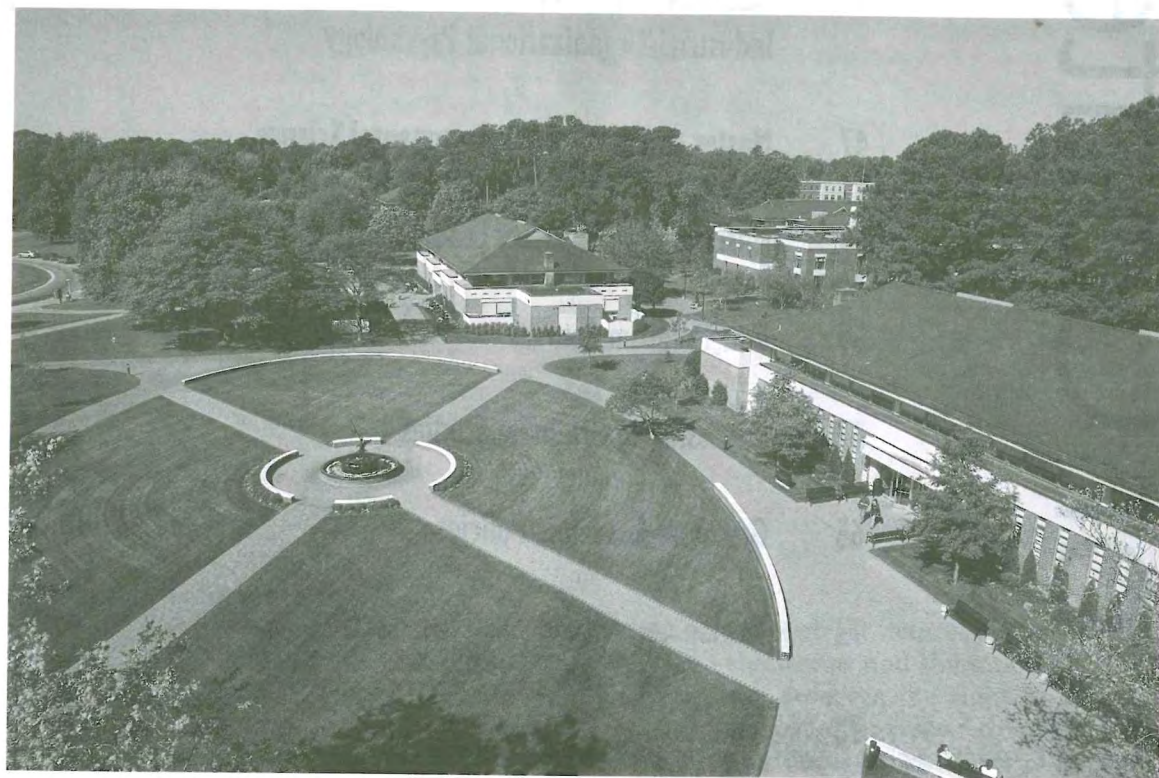
The provisions of this catalog do not constitute a contract, expressed or implied, between any applicant or student and the Rector and Visitors of Christopher Newport University. The University reserves the right to change any of the provisions, schedules, programs, courses, rules, regulations, or fees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

University Affirmative Action/ Equal Opportunity Policy

Christopher Newport University does not discriminate in admission, employment or any other activity, on the basis of race, gender, color, age, religion, veteran status, national origin, disability, or political affiliation. The University complies with all applicable state and federal constitutional provisions, laws and regulations concerning discrimination. Anyone having questions concerning these laws should contact the Director of Equal Opportunity.

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Aerial view of the Christopher Newport University Campus

Christopher Newport University

Christopher Newport University is the youngest comprehensive university in the Commonwealth of Virginia. At the same time, it came into being as part of the oldest academic institution in the Commonwealth. For this reason, it combines the best of both long heritage and the contemporary. Christopher Newport College was established and authorized 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 totally independent of The College of William and Mary in 1977. In July 1991 the College began offering graduate programs and in July 1992 became 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 which landed at Jamestown in 1607.

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 opportunities for student involvement in nationally and regionally recognized research and arts programs.

At CNU, we offer Masters' degree programs that provide intellectual and professional development for students. Personal attention to our students by the graduate faculty promotes a student-centered environment where learning and creativity flourish. Our graduate programs are based upon a long-standing tradition of excellence in our undergraduate programs.

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 the Commonwealth.

Graduate Studies

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

Organization of the University

The academic areas of the University are organized into the College of Liberal Arts and Sciences and the School of Business, each administered by a dean. The graduate program is administered by the Director of Graduate Studies with instruction and research carried out by the graduate faculty.

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

Organization of the Academic Year

The University year is divided into two semesters, August to December (Fall Semester) and January to May (Spring Semester); and four summer sessions. Graduate students may be admitted to the University for full or part-time study beginning the fall or spring semesters or prior to any summer session.

Accreditation

Christopher Newport University is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools (1866 Southern Lane, Decatur, Georgia 30033-4097; telephone number (404) 679-4501) to award degrees at the baccalaureate and master's degree levels.

Location

The University is located in suburban Newport News, midway between Williamsburg and Norfolk. The campus is readily accessible to residents of Hampton Roads. Air service is available at the nearby Newport News/Williamsburg International Airport and at the Norfolk International Airport.

Student Services

The University's student development services and facilities are available to all students and are described fully in the *2001-2002 Christopher Newport University Undergraduate Catalog*.

Services for Students with Disabilities

CNU provides reasonable accommodations to make education accessible to students with disabilities. The Academic Advising Center assists students with disabilities by understanding the individual student's particular strengths and needs and providing support to help the student achieve academic goals. The aim of Services for Students with Disabilities is to provide students with disabilities equal access to the programs, opportunities and benefits of the University. Students with disabilities may consult with the Coordinator before or during their active enrollment at CNU. New students will want to contact the Coordinator well before beginning their first semester if special services will be required. While consultation with the Coordinator is always available, students who request accommodation by the University must formally declare their disability by completing a form obtained from the Academic Advising Center.

In order to determine needs and provide the best services possible, students are asked to provide recent documentation concerning their disability. Such documentation would include their disability and suggestions for possible accommodation to enhance student access and/or success in the programs and activities of the University. Documentation should be provided in writing from a qualified professional source and mailed to:

Ms. Deborah Q. Witt
Coordinator for Students with Disabilities
Christopher Newport University
1 University Place
Newport News, VA 23606-2998

Evaluation information concerning a student's disability is private. Such information will be provided to instructional or staff members only when they have a legitimate "need to know," and only then with the student's agreement. Questions concerning reasonable accommodation of a student's disability or handicap should be directed to the Coordinator by mail, by calling (757) 594-8763, TDD: (757) 594-7938, or TDD: (800) 828-1120, the Virginia Relay Center, or email: dwitt@cnu.edu.



The Captain John Smith Library

Graduate Studies

Master of Arts in Teaching

This master's program is practitioner-oriented, and available for those already holding an undergraduate degree and/or teaching certification, as well as for those with no teacher education or with provisional certification. In this program, students prepare to become master teachers in a content area and demonstrate direct application of the coursework in the classroom.

Master of Science in Applied Physics and Computer Science

The emphasis of this master's program is on experimentation, instrumentation and computer analysis. The degree, with three concentration areas, is designed to produce graduates ready to make strong contributions to their professions and, if they so desire, to continue toward a Ph.D. degree in applied physics, computer engineering or computer science.

Master of Science in Applied Psychology with a Concentration in Industrial/Organizational Psychology

A master's degree with a concentration in industrial/organizational psychology is a key to advancement in human resources and personnel, training, employee relations, organizational and human resources research, organizational development and organizational consulting.

A 12-hour certificate program, Certificate of Organizational Leadership, is available on a non-degree basis.

Master of Science in Environmental Science

Designed for current and prospective employees in the new, rapidly growing field of environmental monitoring and conservation, this master's program provides a solid background in ecological and environmental conservation theory. Students also develop the skills required for employment with environmental assessment/monitoring businesses and state governmental agencies.

Master of Public Safety Leadership

This master's program utilizes foundation and core courses, both in campus-based classrooms and online, focusing upon managerial knowledge, skills and abilities which are common to leadership in all public safety agencies. A 15-hour certificate program, Certificate of Public Safety Management, is offered also.



May 2001 Masters of Teaching (MAT) graduates

Master of Arts in Teaching

The Master of Arts in Teaching is designed for teachers and those who desire to be teachers to enhance their skills in the classroom. This program offers graduate students the latest advancements in content area teaching through hands-on activities, discussion and research.

All students study major learning theories in light of congruent instructional practices and have the opportunity to focus on concepts, methodologies and procedures of educational research. In addition, an emphasis is placed on the study of diversity in the United States and implications of that diversity for educational programming and practice.

MAT students select a concentration in content areas of language arts, mathematics, science or history. Two language arts and mathematics tracks are available, one for those who hold licensure and one for those who are seeking licensure. The mathematics concentration offers teachers a chance to explore mathematics pedagogy as recommended by the National Council of Teachers of Mathematics (NCTM). The science concentration focuses on environmental education and provides a solid background in ecological and environmental issues. The history concentration allows students to focus on targeted areas of world history, and to acquire historical research methods. The language arts concentration provides advanced study in literature, language arts, and writing.

Students may enroll on a part-time or a full-time basis. Teachers may wish to take advantage of the many evening and summer graduate course offerings for re-licensure or continued professional development.

The Master of Arts in Teaching

The Master of Arts in Teaching is a practitioner-oriented degree designed to integrate pedagogy with specific academic subject areas. In addition, the program emphasizes theory and practice related to human learning, an understanding of the multicultural differences among students, and an understanding of how to conduct and interpret educational research. The program is specifically designed to strengthen the content knowledge of teachers and to demonstrate teaching strategies appropriate to each concentration. 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 Holmes Group.

Admission Requirements for Degree-seeking Students

1. A baccalaureate degree from a regionally 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, and official transcripts for all graduate work taken at other institutions;
3. Three letters of recommendation. 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. Passing scores from the PRAXIS I (Reading, Writing and Mathematics) for the MAT-Licensure Track or scores from the specialty area test of the PRAXIS series for those holding licensure.
5. For the MAT-Licensure Track applicant, a one-page typed essay describing the applicant's purpose for entering the teaching profession.

Admission Requirements for Teachers Enrolling in a Non-degree Status

Any Virginia teacher who desires to enroll in a course for re-licensure or continued professional development may do so in a non-degree status and, as such, does not need to furnish an official baccalaureate transcript. To change to degree-seeking status, the non-degree student must submit the Application for Admission to Graduate Study, and supply the documentation listed above in the Admission Requirements for Degree-seeking Students section.

Academic Policy for Non-degree Students

Individual courses in the curriculum may be taken by students not pursuing an advanced degree at the University by registering as a non-degree student. Students seeking non-degree admission status must have a grade point average of at least 3.0 on a 4.0 scale. If the student intends to pursue the MAT, he or she must change to degree-seeking status within the first 6 hours of graduate study.

Curriculum

The MAT curriculum for those with licensure consists of Introductory, Specialty and Capstone courses designed to deepen the knowledge of specific content areas for practicing teachers. A thesis, project or portfolio serves as a culminating learning experience. The MAT curriculum for those obtaining licensure includes education and content courses to provide opportunities to learn teaching methods appropriate to language arts or mathematics. A student teaching experience serves as the culminating event.

Graduation Requirements

- Successful completion of minimum hours of the MAT degree program course work;
- An overall graduate grade point average of 3.00 in all CNU courses submitted for graduate credit with no more than two grades of C;
- Registration and timely petition for candidacy prior to the final semester; and
- Successful defense of a culminating project, portfolio, or thesis and presentation of the appropriate number of approved copies to the Graduate Studies Office by the published deadline.

Graduate Assistantships

Graduate assistants are employed to perform research, teaching and/or administrative activities 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, be enrolled in 6-9 graduate credit hours in the semester of the award. Refer to page 71 for specific terms, criteria and application procedures.

Programs of Study

Language Arts

This program integrates pedagogy with the current theory and practice in reading and thinking about literature; the teaching of writing in various contexts and for differing purposes; and the structure and acquisition of language skills.

Goals of the MAT Program in Language Arts

The Master of Arts in Teaching Language Arts has been designed to prepare master teachers of the language arts. Program goals for this MAT are to demonstrate:

1. Familiarity with at least two literary forms and artistic innovations in literature.
2. Familiarity with at least two works for young readers or two authors of such works.
3. Understanding of cultural milieu (social concerns, cultures, cultural groups, geographical regions, ethnicity, gender, moral and/or religious values) through language and literature.
4. Comprehension of critical writing about literature.
5. Logical critical judgments about literature.
6. Precise, appropriate use of the vocabulary of literary study.
7. Theoretical knowledge of the processes of effective writing.
8. Practical knowledge of the processes of effective speaking and writing.
9. Knowledge of the English syntax and grammar, or of the teaching of English as a second language.
10. Ability to locate and use bibliographic and other resources appropriate to language arts teaching.
11. Infusion of multicultural education into instructional design.
12. Understanding of how learning theory impacts instructional design.
13. Ability to consume and/or produce educational research.
14. Knowledge of at least three current educational issues in the field of language arts instruction.
15. Application of current and effective instructional strategies to language arts instruction.
16. Ability to reflect on new learning and make connections to prior learning.

The Master Portfolio Project

The Master Portfolio Project is a culmination of the work done throughout the MAT program. The individually designed portfolios connect MAT-Language Arts program objectives to demonstrated student competencies. This is a cumulative and summative experience that requires synthesis and evaluation. The Portfolio Interview serves as the comprehensive final examination.

MAT-Language Arts Curriculum for those with Licensure

Academic Prerequisites

Students will need to provide evidence of satisfactory completion of undergraduate courses ENGL 308, Approaches to Literature, and ENGL 309, Prose Writing, or their equivalents. This degree is intended for, but not limited to, currently licensed teachers.

MAT Language Arts Program of Study 36 Credits			
Area I: Introductory Courses		Credits	Hours
EDUC 500	Learning Theory, Classroom Practice	3	
EDUC 501	Multicultural Education or		
EDUC 505	National Board Certification Seminar	3	
EDUC 502	Teachers as Researchers	3	
Area II: Specialty Courses			
Specialty Courses (see below)		18	
Area III: Capstone and Application Courses		6 hours selected from	
EDUC 521	Early Literacy	EDUC 521-649	
EDUC 522	Integrated Curriculum		
EDUC 523	Reading and Writing in Content Area		
EDUC 524	Standards-Based Curriculum		
EDUC 531	Strategies and Models of Gifted Education or		
EDUC 649	Advanced Instructional Strategies		
EDUC 696	Capstone Seminar	3	
TOTAL		36	
Specialty Courses (18 Credits Total)		Elementary	Middle/Secondary
ENGL 501	Teaching Literature (3)		
ENGL 510	Reading Southern American Literature (3)	3 Credits required	9 Credits required
ENGL 511	Reading Latin American Literature (3)	from ENGL 501, 513,	from ENGL 510-518
ENGL 512	Reading Multicultural Literature (3)	or 516-518	
ENGL 513	Reading Native American Literature (3)		
ENGL 514	Advanced Studies in Children's Literature (3)	3 Credits required	
ENGL 515	Special Topics in Children's Literature (3)	from ENGL 514, or 515	
ENGL 516	Teaching Shakespeare (3)		
ENGL 517	Reading African and Middle Eastern Literature (3)		
ENGL 518	Reading Asian Literature (3)		
ENGL 519	Advanced Studies in Young Adult Literature (3)		
ENGL 520	The Reading and Writing of Poetry (3)	3 Credits required	9 Credits required
ENGL 521	Teaching Composition in L.A. Classes (3)	from ENGL 520-525	from ENGL 520-532
ENGL 523	The Way of the Writer (3)		(at least 3 must be
ENGL 524	Journalism: Teaching of Reporting,		from 530-532)
	Writing and Editing (3)		
ENGL 525	Technical Writing Applications (3)		
ENGL 530	Advanced Grammar and Linguistics (3)	3 Credits required	
ENGL 531	Teaching English as a Second Language (3)	from ENGL 530-532	
ENGL 532	The Study of Language (3)		
Electives from the above English courses		6 Credits required	

MAT-Language Arts Curriculum for those Obtaining Licensure

Academic Prerequisites

Students will need to provide evidence of satisfactory completion of undergraduate courses in English in advanced literature analysis, children's or adolescent literature, and grammar. Required also is the course EDUC 301, Perspectives in Education, or equivalent, and a course in human growth and development appropriate to the endorsement level. Requirements for specific teaching endorsement levels are indicated below.

Elementary

- Coursework in social studies, to include the study of world and US history, government, economics and geography (or other evidence of competency)
- Coursework in mathematics, including number systems, algebra, geometry and statistics, (or other evidence of competency) as well as the teaching of mathematics (MATH 308)
- Coursework in science, including one laboratory course, to include the study of physical, earth and life sciences (or other evidence of competency) as well as the teaching of science (BIOL 310)
- 3 hours in technology (EDUC 406 or equivalent)

Middle

- 21 hours in a concentration other than English (mathematics, social studies or science-see advisor for requirements)
- 3 hours in technology (EDUC 406 or equivalent)

Secondary

- Degree in English
- 3 hours in technology (EDUC 406 or equivalent)

MAT Language Arts with Licensure Program of Study 36 Credits			
Education Courses (24 Credits)			
EDUC 501	Multicultural Education (3)		
EDUC 510	Teaching Internship (6)		
EDUC 516	Curriculum and Instruction (3)		
EDUC 521	Early Literacy (3) or		
EDUC 523	Reading and Writing in Content Areas (3)		
EDUC 535	The Exceptional Learner (3)		
EDUC 543	Classroom Management and Discipline (3)		
EDUC 544	Evaluation of Learning (3)		
English Courses (12 Credits)		Elementary	Middle/Secondary
ENGL 501	Teaching Literature (3)		
ENGL 510	Reading Southern American Literature (3)		
ENGL 511	Reading Latin American Literature (3)		Required
ENGL 512	Reading Multicultural Literature (3)		
ENGL 513	Reading Native American Literature (3)		
ENGL 514	Advanced Studies in Children's Literature (3)	Required	
ENGL 515	Special Topics in Children's Literature (3)		
ENGL 516	Teaching Shakespeare (3)		
ENGL 517	Reading African and Middle Eastern Literature (3)		
ENGL 518	Reading Asian Literature (3)		
ENGL 519	Advanced Studies in Young Adult Literature (3)		
ENGL 520	The Reading and Writing of Poetry (3)		
ENGL 521	Teaching Composition in L.A. Classes (3)	Required	Required
ENGL 523	The Way of the Writer (3)		
ENGL 524	Journalism: Teaching of Reporting,		
	Writing and Editing (3)		
ENGL 525	Technical Writing Applications (3)		
ENGL 530	Advanced Grammar and Linguistics (3)	3 Cr. required from	3 Cr. required from
ENGL 531	Teaching English as a Second Language (3)	ENGL 530 or 532	ENGL 530 or 532
ENGL 532	The Study of Language (3)		
Elective from above English courses		3 Credits required	3 Credits required

Mathematics and Science

Goals of the MAT Program in Mathematics and Science

As a practitioner's degree, the MAT programs in mathematics and science are designed to assist students in the development of specific qualities recognized in master teachers. This degree is intended for, but not limited to, currently licensed teachers. Successful completion of the program results in the following:

- 1. An increase in knowledge of specific mathematics or science content.
- 2. An understanding of current learning theories as applied to classroom practice.
- 3. An understanding of the need and practices for multicultural education.
- 4. The ability to analyze and design educational research.
- 5. The application of appropriate and varied teaching strategies in the content area.
- 6. The production of quality research or an innovative project which adds to the field of mathematics or science teaching.

Thesis or Culminating Project

As the final portion of the program, the student elects to produce either a thesis or a culminating project completed under the guidance of an advisor and committee.

The purpose of the thesis is to allow students to present an original piece of research. The thesis consists of a problem, review of related research, data collection and analysis. The final manuscript is defended before the thesis committee and submitted as a bound document to the Office of Graduate Studies.

The purpose of the culminating project is to engage the student in an intense practical experience with science or mathematics education. The project criteria are as follows:

The project must:

- clearly relate to science or mathematics issues in the public school;
- result in a written product which can be viewed and shared by colleagues;
- add to the student's content and professional knowledge;
- be novel and not duplicative of other activities in the school district;
- clearly emphasize appropriate and current methodology in science or mathematics education; and
- contain evaluation elements whereby the student assesses the impact of the project.

The steps in the preparation of the thesis and culminating project include:

- identification of advisor and committee;
- preparation of proposal;
- proposal approved by advisor and committee; and
- thesis or project presented and defended.

The project and the thesis each require six credits which must be accrued over several semesters. The student may not proceed beyond the first credit without committee approval of the proposal.

Mathematics

This program integrates the recommendations of the National Council of Teachers of Mathematics and content from the Virginia Standards of Learning to introduce teachers to new teaching strategies and a deeper knowledge of mathematics. This practitioner degree encourages a reflective investigation of teaching practices and the direct application of coursework to the classroom.

MAT-Mathematics Curriculum

Academic Prerequisites

Students concentrating in mathematics at the elementary grade level must have at least three courses in mathematics and two courses in science. The mathematics courses must include college algebra, elementary statistics, and geometry. Students concentrating in mathematics at the secondary level must have a mathematics major or its equivalent.

MAT Mathematics Program of Study 33 Credits		
Area I: Introductory Courses		Credit Hours
EDUC 500	Learning Theory, Classroom Practice	3
EDUC 501	Multicultural Education or	
EDUC 505	National Board Certification Seminar	3
EDUC 502	Teachers as Researchers	3
Area II: Specialty Courses		
Specialty Courses (see below)		18
Area III: Capstone, Thesis or Project		
MATH 699	Mathematics-Thesis or Culminating Project	6
TOTAL		33
Specialty Courses		Elementary Middle/Secondary
MATH 570	Advanced Instructional Strategies in Mathematics (3)	Required Required
MATH 573	History of Mathematics (3)	
MATH 575	Computer Software and Calculators in School Mathematics (3)	
MATH 576	Mathematical Connections (3)	
MATH 578	Elementary Geometry from an Advanced Viewpoint (3)	Required
MATH 579	Modern Analysis (3)	
MATH 581	Graduate Abstract Algebra (3)	
MATH 584	Mathematics Cognition (3)	Required Required
MATH 585	Advanced Studies of Elementary School Concepts (3)	Required
MATH 591	Directed Research and Internship for Educators (3)	

MAT-Mathematics Curriculum for those Obtaining Licensure

Academic Prerequisites

Students will need to provide evidence of a Bachelors Degree in a liberal arts subject. Required also is the course EDUC 301, Perspectives in Education, or equivalent, and a course in human growth and development appropriate to the endorsement level. Requirements for specific teaching endorsement levels are indicated below.

Elementary

- Coursework in the required support courses. Language/Communication Arts: ENGL 101-102 or ENGL 103-104; ENGL 314; ENGL 430; COMM 201.
- Coursework in social studies, to include the study of world and U.S. history, government, economics, and geography (or other evidence of competency).
- Coursework in three mathematics courses including number systems, statistics, geometry and algebra and a course in the teaching of mathematics (MATH 308).
- Coursework in two science courses, including one laboratory course, to include the study of physical earth, and life sciences (or other evidence of competency) as well as the teaching of science (Natural Science 310).

Middle

- Degree in mathematics, English, social studies or science.
- Twenty-one hours in a concentration other than major for degree (mathematics, English, social studies, or science - see advisor for requirements).
- A course in the teaching of mathematics (MATH 309).

Secondary

- Degree in Mathematics.
- A course in the teaching of mathematics (MATH 338).

**MAT Mathematics with Licensure
Program of Study 36 Credits**

Education Courses (24 credits)

EDUC 501	Multicultural (3)
EDUC 510	Teaching Internship (6)
EDUC 516	Curriculum and Instruction (3)
EDUC 521	Early Literacy (3) or
EDUC 523	Reading and Writing in Content Areas (3)
EDUC 535	The Exceptional Learner (3)
EDUC 543	Classroom Management and Discipline (3)
EDUC 544	Evaluation of Learning (3)

Mathematics Courses (12 credits)

	Elementary	Middle/Secondary
MATH 570	Advanced Instructional Strategies in Mathematics	
MATH 573	History of Mathematics	
MATH 575	Computer Software and Calculators in School Mathematics	Required
MATH 576	Mathematical Connections	Required
MATH 578	Elementary Geometry from an Advanced Viewpoint	
MATH 584	Mathematics Cognition	Required
MATH 585	Advanced Studies of Elementary School Mathematics Topics	Required
Electives from above Mathematics Courses	Required 3 Credits	3 Credits

Science

This program directly addresses the Virginia State Standards of Learning which include the study of scientific resources at every level from K-6; ecosystem dynamics in grade 7; and environmental influences in Earth Science (grade 9) and Biology (grade 10). Students in the program will conduct original research in schools or in environmental settings, or prepare an original project for schools or communities.

MAT-Science Curriculum

Academic Prerequisites

Students concentrating in science must have at least four semester courses in science, one course in mathematics and one in statistics. The science courses must include at least one lecture course from each of the following areas: biology, earth science, and chemistry or physics; at least two of the four science courses must include a laboratory component.

**MAT Science
Environmental Education
Program of Study 34 Credits**

Area I:	Introductory Courses	Credit Hours
EDUC 500	Learning Theory, Classroom Practice	3
EDUC 501	Multicultural Education or	
EDUC 505	National Board Certification Seminar	3
EDUC 502	Teachers as Researchers	3
Area II:	Specialty Courses	19
BIOL 530	Biogeography (3)	
BIOL 584	The Environment (3)	
BIOL 584L	The Environment Laboratory (1)	
BIOL 585	Marine Biology (3) or	
BIOL 589	Oceanography (3)	
BIOL 595	Field Studies in Environmental Education (3)	
ENVS 525	Environmental Regulations (3)	
BIOL/ENVS	Elective (3) see page 43	
Area III:	Capstone, Thesis or Project	
BIOL 699	Science-Thesis or Culminating Project	6
TOTAL		34

History

This program of study is designed to provide students with an in-depth historical knowledge of at least three major regions of the world, to ensure that graduates are experienced and highly competent researchers of standard historical topics, and to assist students in exploring and comprehending the latest information on learning theory, cultural diversity and methods of teaching. The program offers a choice of thesis research or further study in pedagogy of teaching history.

Goals of the MAT Program in History

As a practitioner's degree, the MAT program in history is designed to assist students in the development of specific qualities recognized in master teachers. Successful completion of the program results in the following:

1. An in-depth historical understanding of at least three of the following regions of the world: Africa, Asia, Latin American, Russia and Central-East Europe, Western Europe and the United States.
2. The capacity to analyze and synthesize standard historical monographs and primary sources.
3. An enhanced ability to conduct and write both educational and historical research.
4. More competent teaching of history through the knowledge of learning theory and multicultural education.

MAT-History Curriculum

Academic Prerequisites

Students concentrating in history must have at least nine credits of upper-level undergraduate history and an additional six hours in the social sciences at the undergraduate level. This degree is intended for currently licensed teachers or those having a strong background in teaching history or social studies.

MAT History Program of Study 36 Credits		
Area I: Introductory Courses		
EDUC 500 Learning Theory, Classroom Practice	3	
EDUC 501 Multicultural Education or		
EDUC 505 National Board Certification Seminar	3	
EDUC 502 Teachers as Researchers	3	
Area II: Specialty Courses		
Six advanced study classes of at least three of the following regions of the world:	18	
Africa		
Asia		
Latin America		
Russia and Central-East Europe		
Western Europe		
United States		
HIST 695 Historiography* (required)	3	
Area III: Application (Thesis or Non-thesis Option)		
	Non-thesis Option	Thesis Option
EDUC 524 Standards-based Curriculum	3	
HIST 570 Advanced Strategies in Teaching History*	3	
Or		
HIST 699 History-Thesis		6
TOTAL	36	36

* Pending approval of the Graduate Faculty Council and the University Provost

Five-year Program B.A. in Mathematics/MAT in Mathematics

This five-year program of study is designed for prospective teachers majoring in mathematics. At the successful conclusion of the program students will receive a B.A. in Mathematics, a Master of Arts in Teaching-Mathematics, and a Virginia license for teaching.

Admission Requirements:

1. A grade point average of 3.00;
2. Grade of A or B in Education 301, Education 305, Education 406, and satisfactory completion of MATH 308, 309, or MATH 338;
3. Three letters of recommendation;
4. Passing scores on the PRAXIS I; and
5. A one-page typed essay describing the student's purpose for entering the teaching profession. Students must apply to this program by the second semester of the junior year.

Graduation Requirements:

1. Completion of all course requirements for undergraduate degree of at least 120 hours of study, including all required distribution courses, all education support courses, all mathematics courses for the bachelor's degree.
2. Completion of all course requirements for the graduate degree of at least 33 hours of study as listed below with an overall graduate grade point average of 3.0.
3. Successful teaching internship in a public school.
4. Passing score on Specialty Examination as required by the Commonwealth of Virginia.
5. Lesson Plan Project presented to committee.

MAT Mathematics with Licensure Program of Study 33 Credits		
Education Courses (18 Credits)		Credit Hours
EDUC 521 Early Literacy or		3
EDUC 523 Reading and Writing in Content Areas		3
EDUC 535 The Exceptional Learner		3
EDUC 543 Classroom Management and Discipline		3
EDUC 544 Evaluation of Learning		3
EDUC 510 Teaching Internship		6
Specialty Courses (15 Credits approved by advisor from the following)		
MATH 570	Advanced Instructional Strategies in Mathematics (3)	
MATH 573	History of Mathematics (3)	
MATH 575	Computer Software and Calculators in School Mathematics (3)	
MATH 576	Mathematical Connections (3)	
MATH 578	Elementary Geometry from an Advanced Viewpoint (3)	
MATH 579	Modern Analysis (3) or	
MATH 581	Graduate Abstract Algebra (3)	
MATH 584	Mathematics Cognition (3)	
MATH 585	Advanced Studies of Elementary School Mathematics Topics (3)	
MATH 591	Directed Research and Internship for Educators (3)	

Five-year Program B.A. in Biology/MAT in Science

This five-year program of study is designed for prospective middle grades (4-8) science teachers majoring in biology or prospective high school biology teachers. At the successful conclusion of the program, students will receive a B.A. in Biology, a Master of Arts in Teaching in Science, and a Virginia license for teaching elementary, middle or high school.

Admission Requirements:

1. A grade point average of 3.00;
2. Grade of A or B in Education 301, Education 305, Education 406 and satisfactory completion of two upper-level biology courses;
3. Three letters of recommendation;
4. Passing scores on the PRAXIS I; and
5. A one-page typed essay describing the student's purpose for entering the teaching profession. Students must apply to this program by the second semester of the junior year.

Graduation Requirements:

1. Completion of all course requirements for undergraduate degree of at least 120 hours of study, including all required distribution courses, all education support courses, all courses for the bachelor's degree in biology.
2. Completion of all course requirements for the graduate degree of at least 33 hours of study as listed below with an overall graduate grade point average of 3.0.
3. Successful teaching internship in a public school.
4. Passing score on Specialty Examination as required by the Commonwealth of Virginia.
5. Lesson Plan Project presented to committee.

MAT Science with Licensure Environmental Education Program of Study 33 Credits

Education Courses (18 Credits)

EDUC 521	Early Literacy (3) or
EDUC 523	Reading and Writing in Content Areas (3)
EDUC 535	The Exceptional Learner (3)
EDUC 543	Classroom Management and Discipline (3)
EDUC 544	Evaluation of Learning (3)
EDUC 510	Teaching Internship (6)

Science Courses (15 Credits approved by advisor from the following)

BIOL 530	Biogeography (3)
BIOL 584	The Environment (3)
BIOL 584L	The Environment Laboratory (1)
BIOL 595	Field Studies in Environmental Education (3)
ENVS 525	Environmental Regulations (3)
BIOL/ENVS	Electives, see page 43

Five-year Program B.A. in English/MAT in Language Arts

This five-year program of study is designed for prospective elementary teachers majoring in English, middle school teachers majoring in English or prospective high school English teachers. At the successful conclusion of the program, students will receive a B.A. in English, a Master of Arts in Teaching in Language Arts, and a Virginia license for teaching elementary, middle or high school.

Admission Requirements:

1. A grade point average of 3.00;
2. Grade of A or B in Education 301, Education 305, Education 406, and English 308 and 309;
3. Three letters of recommendation;
4. Passing scores on the PRAXIS I;
5. A one-page typed essay describing the student's purpose for entering the teaching profession. Students must apply to this program by the second semester of the junior year.

Graduation Requirements:

1. Completion of all course requirements for undergraduate degree of at least 120 hours of study, including all required distribution courses, all education support courses, and all English courses for the bachelor's degree.
2. Completion of all course requirements for the graduate degree of at least 33 hours of study as listed below with an overall graduate grade point average of 3.0.
3. Successful teaching internship in a public school.
4. Passing score on Specialty Examination as required by the Commonwealth of Virginia.

MAT Language Arts with Licensure Program of Study 33 Credits

Education Courses (18 Credits)

EDUC 521	Early Literacy (3) or
EDUC 523	Reading and Writing in Content Areas (3)
EDUC 535	The Exceptional Learner (3)
EDUC 543	Classroom Management and Discipline (3)
EDUC 544	Evaluation of Learning (3)
EDUC 510	Teaching Internship (6)

English Courses (15 Credits approved by advisor from the following)

ENGL 501	Teaching Literature (3)
ENGL 510	Reading Southern American Literature (3)
ENGL 511	Reading Latin American Literature (3)
ENGL 512	Reading Multicultural Literature (3)
ENGL 513	Reading Native American Literature (3)
ENGL 514	Advanced Studies in Children's Literature (3)
ENGL 515	Special Topics in Children's Literature (3)
ENGL 516	Teaching Shakespeare (3)
ENGL 517	Reading African & Middle Eastern Literature (3)
ENGL 518	Reading Asian Literature (3)
ENGL 519	Advanced Studies in Young Adult Literature (3)
ENGL 520	The Reading and Writing of Poetry (3)
ENGL 521	Teaching Composition in L.A. Classes (3)
ENGL 523	The Way of the Writer (3)
ENGL 524	Journalism: Teaching of Reporting, Writing & Editing (3)
ENGL 525	Technical Writing Applications (3)
ENGL 530	Advanced Grammar and Linguistics (3)
ENGL 531	Teaching English as a Second Language (3)
ENGL 532	The Study of Language (3)

Five-year Program B.A. in History/MAT in History

This five-year program of study is designed for prospective middle grades (4-8) history teachers majoring in history or prospective high school history teachers. At the successful conclusion of the program students will receive a B.A. in History, a Master of Arts in Teaching in History, and a Virginia license for teaching elementary, middle, or high school.

Admission Requirements:

1. A grade point average of 3.00;
2. Grade of A or B in Education 301, Education 305, Education 406 and two upper-level history courses;
3. Three letters of recommendation;
4. Passing scores on the PRAXIS I; and
5. A one-page typed essay describing the student's purpose for entering the teaching profession. Students must apply to this program by the second semester of the junior year.

Graduation Requirements:

1. Completion of all course requirements for undergraduate degree of at least 120 hours of study, including all required distribution courses, all education support courses, and all courses for the bachelor's degree in history.
2. Completion of all course requirements for the graduate degree of at least 36 hours of study as listed below with an overall graduate grade point average of 3.0.
3. Successful teaching internship in a public school.
4. Passing scores on Specialty Examination as required by the Commonwealth of Virginia.
5. Lesson Plan Project presented to committee.

MAT History with Licensure Program of Study 36 Credits

Education Courses (18 Credits)

EDUC 521	Early Literacy (3) or
EDUC 523	Reading and Writing in Content Areas (3)
EDUC 535	The Exceptional Learner (3)
EDUC 543	Classroom Management and Discipline (3)
EDUC 544	Evaluation of Learning (3)
EDUC 510	Teaching Internship (6)

History Courses (15 Credits approved by advisor from the following)

Six advanced study classes of at least three of the following regions of the world:

Africa
Asia
Latin America
Russia and Central-East Europe
Western Europe
United States

And

HIST 695 Historiography (3)

MAT Courses of Instruction

Introductory Courses

EDUC 500. Learning Theory, Classroom Practice (3-3-0)

A study of major learning theories including behaviorism, cognitive information processing, developmental theories and constructivism. Each theory will be examined in the light of congruent instructional practices.

EDUC 501. Multicultural Education (3-3-0)

The study of diversity in the United States, including race, ethnicity, gender and socioeconomic class, and implications for educational programming and practice.

EDUC 502. Teachers as Researchers (3-3-0)

Teachers as consumers and producers of research. Focuses on concepts, methodologies and procedures of educational research including problem identification, data collection and analysis, and application to educational problems.

EDUC 505. National Board Certification Seminar (3-3-0)

This course prepares accomplished practicing teachers for certification by the National Board for Professional Teaching Standards. Emphasis is placed on the basis for National Board Certification, what is expected of candidates for certification and step by step information about the process of becoming a National Board certified teacher. Teachers have the opportunity to work on each of the components of their certification for application to assessment.

Education

EDUC 510. Teaching Internship (6-0-18)

A full-time 10-week clinical teaching experience in the public schools.

EDUC 516. Curriculum and Instruction (3-3-0)

This course examines curriculum, the teaching-learning process, and instructional strategies appropriate to the elementary, middle or secondary level.

EDUC 521. Early Literacy (3-3-0)

A study of effective methods to teach beginning reading and literacy skills.

EDUC 522. Integrated Curriculum (3-3-0)

The course allows teachers to explore the rationale for integrating the curriculum, and provides models of curriculum integration, and practice in creating integrated instructional units and activities.

EDUC 523. Reading and Writing in Content Areas (3-3-0)

Focus is on the skills and strategies for teaching reading and writing through the content areas, with emphasis on reading comprehension, vocabulary development, study skills, and expository writing.

EDUC 524. Standards-Based Curriculum (3-3-0)

Students learn to view curriculum development in terms of rigorous academic content. They practice calibration of curriculum design to the Virginia Standards of Learning, the national standards, and higher levels of thinking and articulation.

EDUC 531. Strategies and Models of Gifted Education (3-3-0)

This course will enable teachers to identify a variety of strategies and models that are used in differentiating instruction for gifted learners. Participants will learn to adapt these techniques to the individual learning styles of gifted students so that the students will be academically and intellectually challenged to develop to their fullest potential.

EDUC 535. The Exceptional Learner (3-3-0)

This course examines all types of exceptionality: gifted, learning disabled, visually impaired, hearing impaired, physically handicapped, emotionally disordered and mentally retarded; and strategies for the development, implementation and evaluation of individual education programs.

EDUC 543. Classroom Management and Discipline (3-3-0)

A study of classroom organization and management for optimal student learning; practical approaches for preventing and coping with behavior problems.

EDUC 544. Evaluation of Learning (3-3-0)

An analysis and construction of evaluation instruments, including test and performance assessments; also, the interpretation and use of standardized test results.

EDUC 595. Advanced Topics in Education (Credit varies)

Course topics are selected on the basis of faculty and student interests.

EDUC 599. Independent Study (1-6 Credits)

EDUC 649. Advanced Instructional Strategies (3-3-0)

The study and research of various instructional strategies for secondary schools, from the traditional models to the new "break-the-mold" designs developed to meet the needs of a new generation of students.

EDUC 695. Capstone Seminar for Mathematics and Science Concentrations (1-1-0)

Culminating course for students in the last semester of degree completion of the MAT Mathematics and Science degree program. The course will meet in seminar format to discuss individual research issues and prepare for a culminating presentation of the student's final thesis or project. Pass/Fail Course.

EDUC 696. Capstone Seminar for Language Arts Concentration (3-3-0)

This culminating course for students in the MAT Language Arts degree program provides an opportunity to complete a Master Portfolio Project developed throughout the MAT Program. The students will meet weekly to discuss research and innovations in language arts instruction, to share individually designed portfolios and to connect MAT Language Arts Program Objectives to critical issues in language arts education. Pass/Fail Course.

EDUC 699. Thesis or Culminating Project (6 Credits, taken in increments)

The student may not proceed beyond the first credit without committee approval of the proposal.

Language Arts Concentration

ENGL 501. Teaching Literature (3-3-0)

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 language arts classroom.

ENGL 510. Reading Southern American Literature (3-3-0)

Prerequisite: ENGL 308 and 309 or equivalents

This course analyzes the literature of the American South from perspectives such as family, history and storytelling. The course includes a discussion of canonical literature as well as young adult literature. Students analyze literature and discuss strategies for teaching the literature of the American South.

ENGL 511. Reading Latin American Literature (3-3-0)

Prerequisite: ENGL 308 and 309 or equivalents

A study focusing on literary works (including works for young readers) from Latin America. The course provides the skills necessary to see the world from a non-Western perspective and the capacity to teach others to comprehend that perspective.

ENGL 512. Reading Multicultural Literature (3-3-0)

Prerequisite: ENGL 308 and 309 or equivalents

This course offers students an opportunity to read and discuss important works written by authors of diverse racial, religious, regional, and ethnic backgrounds in the U.S.A. Students analyze literature and discuss strategies for teaching this literature.

ENGL 513. Reading Native American Literature (3-3-0)

Students analyze major works of Native American oral and written literature and discuss teaching methods.

ENGL 514. Advanced Studies in Children's Literature (3-3-0)

This course is a theoretical inquiry into the nature of children's literature. While reading a variety of contemporary children's books as case studies, students consider what children's literature is, how (or if) it differs from literature for adults, what our cultural and personal assumptions about the nature of childhood are, and how those assumptions govern what adults think children do or ought to read.

ENGL 515. Special Topics in Children's Literature (3-3-0)

Potential foci include the picture book, fantasy, the history of children's books, Children's Literature, Great Books, censored children's books, historical fiction, multicultural children's literature, contemporary realistic fiction, the problem novel, etc. This class requires that students review a number of short critical and theoretical articles on the genre or theme on which the course focuses, as well as study a number of children's books within that genre.

ENGL 516. Teaching Shakespeare (3-3-0)

The course explores recent pedagogical approaches to teaching Shakespeare in the contemporary secondary school classroom. The course provides opportunity to read and apply current pedagogical theory and practice, with emphasis on designing

And testing lessons for active classroom learning, for incorporation technology in instruction, for including performance, and

for developing language appreciation, reading skills, as well as cultural studies and understanding.

ENGL 517. Reading African & Middle Eastern Literature (3-3-0)

Survey and study of the literatures of Sub-Saharan Africa and the Arab and Islamic literature of the Middle East and northern Africa and Israel. Course may focus on particular region or literature.

ENGL 518. Reading Asian Literature (3-3-0)

Survey and study of the literatures of Asia as developed out of the philosophical and religious systems of those cultures.

ENGL 519. Advanced Studies in Young Adult Literature (3-3-0)

This course discusses the evolution of contemporary adolescent literature from the foundations in the 1960s to the present, focusing on the reflection of contemporary social issues and current theories of adolescent psychology in literature for adolescents.

ENGL 520. The Reading and Writing of Poetry (3-3-0)

A course acquainting teachers with the nature of poetry--diction, techniques, forms, and the creative process--and demonstrating means of integrating the reading, oral interpretation, and writing of poetry into the language arts curriculum in order to (1) encourage personal expression, (2) increase awareness of literary art, (3) improve analytical thought, and (4) sustain vocabulary development.

ENGL 521. Teaching Composition in Language Arts Classes (3-3-0)

This course is an introduction to the theory and practice of writing. Not only do participants explore several ways to teach writing, but they also write and present classroom assignments that exemplify these methods. Finally, each participant develops a theory of composition that can be used in the classroom.

ENGL 523. The Way of the Writer (3-3-0)

A workshop course to let teachers experience the creative process. After brief study of the nature of creativity, each participant will work in a type of writing--fiction, poetry, personal essay--and respond to the writing of the other participants. Goal: to work effectively with student writers.

ENGL 524. Journalism: Teaching of Reporting, Writing, and Editing (3-3-0)

The course develops practical approaches to the teaching of reporting, writing and editing in print journalism. Recognizing that journalistic writing often varies radically from academic writing, the course explores practical issues in education and

training student journalists, focusing on teaching techniques such as "coaching," and exploring the re-emergence of "literary journalism." Emphasizing traditional journalistic practice, the course explores strategies for teaching editing skills.

ENGL 525. Technical Writing Applications (3-3-0)

This course focuses on the applications of technical writing in the workplace. In addition to covering the common principles that underlie the design and development of technical communication, the course focuses on written proposals and grants.

ENGL 530. Advanced Grammar and Linguistics (3-3-0)

A study of English grammar, extending traditional terminology, to provide knowledge and vocabulary to explain sentence structure, follow conventions of usage and punctuation, and understand rhetorical effects of grammatical choices. This course will complement the study of sentence grammar with topics relevant to the language arts classroom: illustrative topics include, language acquisition, techniques to facilitate the learning of Standard English by speakers of other languages and dialects, issues of proper v. appropriate grammar, etc. Concepts in linguistics will be reviewed as necessary.

ENGL 531. Teaching English as a Second Language (3-3-0)

The course covers theories of how learners (both children and adults) acquire a second language, theories about how their first language interferes with learning the second, and the various practices for teaching, speaking and writing at various levels of education.

ENGL 532. The Study of Language (3-3-0)

Prerequisites: ENGL 430 or permission of the instructor

This course surveys topics relevant to the language arts classroom: illustrative topics include grammar and writing, language acquisition, techniques to facilitate the learning of Standard English by speakers of other languages and dialects, language variation, spoken versus written English, etc. From this course students will develop a deep awareness of the nature of language, knowledge that has immediate implications for how we engage our students in the school classroom. Concepts in linguistics will be reviewed as necessary. All work will be relativized to the school classroom environment.

ENGL 595. Advanced Topics in English (Credit varies)

Course topics are selected on the basis of faculty and student interests.

ENGL 599. Independent Study (1-6 Credits)

Mathematics Concentration

MATH 570. Advanced Instructional Strategies in Mathematics (3-3-0)

An update of the methodological background necessary for teaching school mathematics, based upon current understanding and insights derived from both content and pedagogy. Development of creative instructional approaches that are meaningful and mathematically correct and instill in students enthusiasm and satisfaction in learning and using mathematics. Includes practice in classroom environment.

MATH 573. History of Mathematics (3-3-0)

A study of the origins, philosophy and development of mathematics from classical antiquity through the twentieth century. Focuses on critical periods in the evolution of areas such as geometry, number theory, algebra and calculus. Involves problem solving as well as reading.

MATH 575. Computer Software & Calculators in School Mathematics (3-3-0)

A course designed to explore the use of computers and graphing calculators as tools in the teaching/ learning of mathematics. An integral part of the course is the hands-on use of selected software for introducing, developing and reinforcing mathematical concepts.

MATH 576. Mathematical Connections (3-3-0)

The study of various topics from algebra, functions, number theory, geometry, probability, and statistics. The course emphasizes the connections and interplay among these topics and their applications so that the student can use and value the connections among mathematical topics and use and value the connections between mathematics and other disciplines.

MATH 578. Elementary Geometry from an Advanced Viewpoint (3-3-0)

Compares and contrasts the origins, applications and basic structures of Euclidean and non-Euclidean geometry. Attention is given to ideas involved in teaching geometry.

MATH 579. Modern Analysis (3-3-0)

A study of the theoretical development of the calculus concepts. Topics include structure and properties of real number systems, functions, sequences and series, antiderivatives, and Lebesgue integral.

MATH 581. Graduate Abstract Algebra (3-3-0)

A review of topics in logic, set theory, and number theory; followed by a systematic study of rings, fields, and vector spaces; field extensions; polynomials and constructibility.

MATH 584. Mathematics Cognition (3-3-0)

This course examines mathematics learning theories developed during the 20th-century with an emphasis on recent research on learning mathematics. The learning theories are related to each other, to mathematics teaching and instruction, and to curricular decision making. Students are expected to implement instructional or curricular changes in their classroom in a unit and then evaluate the implementation.

MATH 585. Advanced Studies of Elementary School Mathematics Topics (3-3-0)

This course covered topics from mathematics courses not required for licensure, but now part of the elementary mathematics curriculum. The topics include statistics, probability, geometry, patterns, and functions. The course will provide an in depth study of concepts within the topics and effective methods for teaching the concepts to elementary students.

MATH 591. Directed Research and Internship for Educators (3-3-0)

Research in applied mathematics at a national laboratory and introduction to innovative methods for teaching mathematics and science. Participants are exposed to instruction by educators and laboratory staff in theoretical and experimental foundations in problem solving. They also receive hands-on telecommunications experiences, research experiences, special presentations and tours. Post-institute follow-up activities are programmed to ensure implementation of Institute strategies and to provide modeling standards among teachers for successful transfer to school systems.

MATH 595. Advanced Topics in Mathematics (Credit varies)

Course topics are selected on the basis of faculty and student interests.

MATH 599. Independent Study (1-6 Credits)

MATH 699. Thesis or Culminating Project (6 Credits, taken in increments)

The student may not proceed beyond the first credit without committee approval of the proposal.

Science Concentration

BIOL 530. Biogeography (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.

BIOL 584. The Environment (3-3-0)

Study of the world's physical and biological resources, their interrelationships, the interactive role of man and other organisms, and the steps necessary to use resources wisely for present and future generations.

BIOL 584L. The Environment Laboratory (1-0-4)

Laboratory involves on-site visitations to resource utilization areas and methodology for implementation of hands-on experiments in the classroom.

BIOL 585. Marine Biology (3-3-0)

Taxonomic and ecological investigations of the major marine groups, pollution ecology and applied marine science.

BIOL 589. Oceanography (3-3-0)

Physical and chemical properties of the hydrosphere, application of ecological principles to the marine environment and history of oceanography.

BIOL 595. Field Studies in Environmental Education (3-0-6)

A two-week field-based course designed for education students, and elementary and secondary teachers. The overall goal of this course is to immerse current and future teachers in outdoor biology to expand their knowledge and appreciation of the natural world. Participants will work toward the following objectives: 1) increase knowledge of biology of local plants and animals; 2) learn exploratory activities for children of varied grade levels to use in school

yards, woodlands, marshes, streams and coastlines - most activities address SOL objectives; and 3) gain experience designing scientifically correct experiments involving wild plants and animals. A large portion of each day is spent outdoors, plus there is one evening class.

BIOL 599. Independent Study (1-6 Credits)

BIOL 699. Thesis Research or Culminating Project (6 Credits, taken in increments)

The student may not proceed beyond the first credit without committee approval of the proposal.

CPSC 580. Computer Technology in the Classroom (3-3-0)

An introduction to hardware and software being used to enhance today's classrooms. Both PC and Macintosh platforms are addressed.

ENVS 525. Environmental Regulations (3-3-0)

A seminar designed to explore current environmental regulations and their impact on various constituents.

**History Concentration
(Additional courses to be developed)**

HIST 502. Roman History (3-3-0)

A history of Rome from the early history of Italy to the fall of the Roman Empire.

HIST 553. Colonial America: Revolution to 1789 (3-3-0)

An examination of the interactions among Africans, Europeans, and Native Americans in English, French and Spanish North American settlements and provinces in the 18th century, concluding with the creation of the United States in the 1770s and 1780's.

HIST 565. History of Islam (3-3-0)

This course examines the fundamental tenets of Islam and its impact on the course of history over the last fourteen centuries.

HIST 595. American: Gilded Age through the Jazz Age (3-3-0)

This course is an analysis of the major economic, social, cultural and political trends in America from the 1870s through the 1920s.

HIST 595. History of Virginia (3-3-0)

An overview of the major political, economic, social and cultural developments in Virginia from the colonial period to the present. The course will be divided into seven eras since 1607: Origins to 1676 Bacon's Rebellion; 1680's to 1763 End of French and Indian War; 1763 to 1814 End of War of 1812; 1815 to 1865 End of the GREAT war; 1865 to 1919 End of Civil War to WWI; 1920 to 1945 Zenith of the Byrd organization; 1945 to present The Modern Service State. A profile of Virginia will be developed for each era. The profiles will facilitate comparisons and understanding of Virginia across time.

HIST 595. Major Themes in Contemporary Africa (3-3-0)

Major issues and events that affect contemporary African societies. A course designed to help students to make a creative and analytical probe into the condition of human life in the Third World in general and Africa in particular beyond the year 2000.

HIST 595. Social History of Modern China (3-3-0)

This course studies the origins and dynamics of Chinese society since 1600, including China's contacts with Western Culture and its search for modernization. Stressed are the decline of the gentry, the status of women, mercantilism, peasant movements, and Chinese social transformation in the twentieth century.

HIST 595. Understanding Contemporary China (3-3-0)

The communist take over of Mainland China in 1949 is a major watershed in modern China. Communist leader Mao dreamed of creating an earthly paradise through continuous revolution. But with his death, his dream was buried forever in his crystal coffin. In the post-Mao era, China has regained her vigor and hope through reform. However, to achieve her century-long goal of modernization, China still has to face many challenges and overcome many obstacles. This seminar focuses on major political, economic, social, and culture developments in China during these two periods since 1949. Through reading, writing, discussions, and other class activities, this seminar will offer students an opportunity to do an in-depth study on contemporary China, and to have a better understanding of the one fifth of world population living on the other side of the planet.

HIST 595. Nineteenth Century Europe (3-3-0)

This course covers the political, social, economic, and cultural history of Europe from 1800-1900. Topics covered will include the Napoleonic Empire, Metternich and era of reaction, the Industrial Revolution, Liberalism, Nationalism and Socialism, the Revolution of 1848, the French Second Empire, the unification of Italy and Germany, the Era of Bismark, nineteenth century imperialism and the Germany of William II.

HIST 595. Twentieth Century World Since 1945 (3-3-0)

This course analyses of the main economic, social, cultural and political features and trends of the major regions of the world since World War II.

HIST 695. Historiography (3-3-0)

The primary goal of this course is to provide graduate students with the opportunity to think seriously and systematically about what is history and how it is written. It exposes students to the contemporary intellectual debates about historical methods. By introducing them to the different types of historical scholarship, the course aims to encourage students to critique their own and others' conceptualizing of history and historical methodologies and to familiarize them with the debates and discourse currently going on among practitioners of history.

HIST 699. Thesis (6 Credits, taken in increments)

The student may not proceed beyond the first credit without committee approval of the proposal.



Graduate student in the M.S. in Applied Physics and Computer Science program

M.S. in Applied Physics and Computer Science

The Master of Science in Applied Physics and Computer Science addresses the need for graduate education in applied physics and computer science. This degree is for both part-time and full time graduate students who desire excellence in instruction, state of the art equipment and software, and a faculty with an intense involvement in the application of physics and computers to solve exciting and significant problems.

The department has amassed a strong record of research and publications in six areas: solid state (lasers, semiconductors and superconductors), nuclear physics, dynamical systems, artificial intelligence, instrumentation and advanced computer systems, and new computer-based technologies for primary and secondary education. Much of this research has resulted in significant scientific collaborations with the two national laboratories here, Applied Research Center and the Thomas Jefferson National Accelerator Facility.

The department has five major teaching-research labs: the Hunter Creech Computer Lab, the Superconductivity and Data Acquisition Lab, the Photonics and Laser Lab, the Digital Systems Lab, and the Information Science Lab. In addition, it has two general purpose laboratories and a large common area for student-faculty collaborations and study.

The Master of Science in Applied Physics and Computer Science

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. Students may elect a thesis option or a non-thesis option.

The CNU master's program offers students with a bachelor's degree a significant step in their maturing as scientists. Because of its location on a suburban campus in the heart of high tech Hampton Roads and its ties with area national labs and newly-developing companies, the department offers to its graduate students opportunities for:

- participation in funded research at both the Thomas Jefferson National Accelerator Facility and the NASA Langley Research Center-- each within a 15 minute drive of the campus;
- research in solid state materials, digital signal processing, high speed data acquisition, artificial intelligence, the design of smart sensors, application-specific integrated circuits, modeling and simulation, and pattern recognition;
- solving the problems of industry through the Applied Research Center (ARC)--a new state-of-the-art research consortium for four area universities;
- working in well-equipped laboratories both on campus and at the ARC;
- creating papers and presentations for national conferences and publications; and
- team-based learning in small classes taught at the cutting edge of their disciplines.

Admission Requirements for Degree-seeking Students

1. A baccalaureate degree from a regionally 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, 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 General Test taken within five years prior to the date of admission. GRE scores are used as one of several indicators of the applicant's ability to succeed in graduate studies; they are never the sole criterion for admission, nor is there a minimum acceptable or cutoff score. For those applicants already holding a master's degree the GRE may be waived by permission of the Director of Graduate Studies. A letter to the Director requesting a waiver is required.
5. International applicants must supply their TOEFL scores and the documentation as stated on page 64 of this catalog.

The Applied Physics and Computer Science program 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 that will be needed for such students. This program is also designed to serve students who want advanced study in the electronic or optical properties of materials, computer science, computer systems engineering or computer controlled instrumentation.

Applicants who have completed interesting research or design projects as undergraduates or as a part of their work are invited to submit descriptions of such projects as support for their application.

Academic Policy for Non-degree Students

Students seeking non-degree admission status must have a grade point average of at least 3.0 on a 4.0 scale. 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, he or she may petition the Program Coordinator 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.

Academic Prerequisites

See each concentration for the specific requirements. 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.

Goals of the Program

The program's overall goal is to provide its graduates with the scientific background and technical tools to:

1. Advance an experimental technique, extend the application of a theory, or produce new data or observations.
2. Design, build and evaluate a system of measurement, instrumentation, computers and/or software.
3. Present logically and clearly the results of their own scientific investigation.
4. Understand and critically evaluate other scientists' work.

Graduate Assistantships

Screening of applicants wishing to be considered for assistantship will begin on May 1 for the following fall semester. See page 79 of the catalog for specific terms, criteria and procedure.

The department has a special initiative that offers assistantships to graduates of liberal arts colleges--A Partnership with Liberal Arts Colleges to Produce High Tech Professionals. It targets students completing baccalaureate programs in computer science, mathematics and the sciences at Virginia's undergraduate liberal arts colleges. It provides graduate assistantships in computer science, and it features the intense personal attention with nurturing faculty mentors and opportunities to engage in research beyond what these students have experienced in their undergraduate colleges. Assistantships during the academic year are available at two levels: 20 hours of work/week, a stipend of \$10,000, and about 1 1/2 years to the degree; 10 hours of work/week, a stipend of \$5,000, and about one year to the degree.

All students selected for Liberal Arts Fellowships will receive a waiver of in-state tuition, attractive office space, and the use of a current PC while they are working on their degrees. In addition, help locating summer employment with technical firms and housing near campus will be available to students who request it. Applications are available on the department's web site (<http://www.pcs.cnu.edu>).

Curriculum

The student chooses either the 30 hour program which requires four core courses, plus four concentration courses and a thesis that includes a design course, or the 36 hour program which requires four core courses, four concentration courses and four electives.

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. The capstone seminars for the concentrations, Computer Systems Design (CPSC 619), Instrumentation Systems Design (PHYS 629), Design of Solid State Systems and Sensors (PHYS 639), and Design of Integrated Modeling and Simulation Environments (PHYS 649), tie these elements securely together and are an integral part of the thesis.

Each student's curriculum is arranged with the student's advisor. The general requirements listed below are guides and serve as models for students' planning for each of the concentrations. Graduate course offerings by other colleges in the area may also form a part of a student's program, giving the student a rich resource of courses from which to set a curriculum.

Thesis Proposal/Comprehensive Oral Examination (Thesis Option)

The culminating requirement for the design course is completion of the Thesis Proposal/Comprehensive Oral Exam. Students not completing the Thesis Proposal/Comprehensive Oral Exam by the end of the design course will receive a grade of U. Students will have two chances to pass the Thesis Proposal/Comprehensive Oral Exam. If the student is not successful the second time, the student will receive an F for the design course and will be suspended from the graduate program.

Comprehensive Examination (Non-Thesis Option)

A written comprehensive examination is required over the concentration courses. A student failing 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.

Memorandum of Understanding

Christopher Newport University has a Memorandum of Understanding with Longwood College for a dual degree program leading to a B.S. in Physics from Longwood College and a M.S. in Applied Physics and Computer Science from CNU. Contact the Program Coordinator (594-7360) for information.

Graduate Certificate Programs

In addition to the M.S. degree, the department offers three graduate certificate programs. A student can receive a certificate in Networked Systems, Software Development and Design, or Applied Artificial Intelligence. Each program consists of three courses. All courses are offered in the evening. For more information contact the Physics, Computer Science, and Engineering Department at 594-7065.

Graduation Requirements

Thesis Option

- Successful completion of 30 hours of the M.S. in Applied Physics and Computer Science degree program course work;
- An overall graduate grade point average of 3.00 in all CNU courses submitted for graduate credit with no more than two grades of C;
- Registration and timely petition for candidacy prior to the final semester;
- Successful completion of the Thesis Proposal/Comprehensive Oral Examination;
- Successful defense of 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 for archive purposes only.

Non-Thesis Option

- Successful completion of 36 hours of the M.S. in Applied Physics and Computer Science degree program course work;
- An overall graduate grade point average of 3.00 in all CNU courses submitted for graduate credit with no more than two grades of C;
- Registration and timely petition for candidacy prior to the final semester;
- Successful completion of the comprehensive examination.

For further information:

Contact the Program Coordinator at (757) 594-7360 or <http://www.pcs.cnu.edu>.

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*; Headington and Riley, *Data Abstraction and Structures Using C++*; 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.

Computer Science Concentration Program of Study 30-36 Credits

Core Courses	Thesis	Non-thesis
Choose any four courses from the following list:	12	12
CPSC 501 Software System Design and Implementation (3) (1st semester)		
CPSC 502 Communications I (3) (Computer Networks) (2nd semester)		
CPSC 510 Artificial Intelligence I (3) (1st semester)		
CPSC 521 Computer Architecture (3) (2nd semester)		
CPSC 550 Distributed Operating Systems (3) (2nd semester)		
Concentration Courses	12	12
Choose any four courses meeting the following requirements::		
1. All courses must be from the M.S. in Applied Physics and Computer Science program.		
2. At least two of the courses must be 600 level courses.		
3. Completion of a second course in at least one of the following sequences.		
Each sequence prepares a student for a possible thesis in a given area.		
<u>Artificial Intelligence Emphasis</u>		
CPSC 510 Artificial Intelligence I (3) (Core Course)		
CPSC 642 Artificial Intelligence II (3)		
<u>Communications Emphasis</u>		
CPSC 502 Communications I (3) (Core Course)		
CPSC 611 Communications II (3)		
<u>Software Engineering Emphasis</u>		
CPSC 501 Software System Design and Implementation (3) (Core Course)		
CPSC 525 Object Oriented Programming and Design with C++ (3)		
Design Course and Thesis (6 credit hours)	6	
CPSC 619 Computer System Design (3)		
Students in the design courses are required to attend all theses proposals and defenses that occur during the course.		
PCSE 699 Thesis Research (3) can be taken only upon successful completion of CPSC 619 design course. Thesis may be taken in one credit increments.		
or		
Non-Thesis Option		12
12 credit hours of electives from the M.S. in Applied Physics and Computer program	—	—
Total	30	36

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*; Headington and Riley, *Data Abstraction and Structures Using C++*; Aho, Hopcroft and Ullman, *Data Structures*; Mano, *Computer Engineering*; Hayt and Kemmerly, *Circuit Theory*.

Computer Systems Engineering and Instrumentation Concentration Program of Study 30-36 Credits

Core Courses	Thesis	Non-thesis
PHYS 521 Computer Architecture (3) (2nd semester)	12	12
CPSC 501 Software System Design and Implementation (3) (1st semester)		
CPSC 502 Communications I (Computer Networks) (3) (2nd semester)		
CPSC/PHYS Any course listed in the Applied Physics core		
Concentration Courses		
Choose any four courses from the following list: (at least two must be 600 level)	12	12
PHYS 503 Data Acquisition and Instrumentation (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)		
Design Course and Thesis (6 credit hours)	6	
PHYS 629 Instrumentation Systems Design (3) or		
CPSC 619 Computer System Design (3)		
Students in the design courses are required to attend all theses proposals and defenses that occur during the course.		
PCSE 699 Thesis Research (3) can be taken only upon successful completion of PHYS 629 or CPSC 619 design course. Thesis may be taken in one credit increments.		
or		
Non-Thesis Option		12
12 credit hours of electives from the M.S. in Applied Physics and Computer program		
Total	30	36

Applied Physics Concentration

Special Features of the Concentration

The applied physics curriculum presents the foundation theories of the physical world: mechanics, electromagnetism, thermodynamics, quantum mechanics, optics and solid state. Students use these models in two computational courses and in their theses where they construct simulations of physical systems, analyze physical systems or design smart sensors, and then display the results of these efforts by using state of the art techniques in computer graphics. This emphasis on fundamental concepts and on computational techniques of modeling and simulation is complemented by the experimental procedures that undergird current practice in data acquisition. As a result, students experience the entire range of effective problem-solving practices: data acquisition and data storage, data analysis based on the fundamental physical models, and graphical display of the results of the analysis.

For students with special interests and with established backgrounds in physics or engineering, the curriculum offers a versatility that allows students in concert with their faculty advisers to tailor graduate programs to suit their own professional goals by combining CNU courses with the offerings at the Virginia Consortium of Engineering and Science Universities (VCES).

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*; Headington and Riley, *Data Abstraction and Structures Using C++*; Aho, Hopcroft and Ullman, *Data Structures*; Hayt and Kemmerly, *Circuit Theory*.

Applied Physics Concentration Program of Study 30-36 Credits

Core Courses	Thesis	Non-thesis
PHYS 501 Models of Dynamical Systems (3) (1st semester)	12	
PHYS 503 Data Acquisition and Instrumentation (3) (1st semester)		
PHYS 504 Electromagnetic Theory (3) (2nd semester)		
PHYS 541 Modeling and Simulation (3) (1st semester)		
Concentration Courses	12	12
Choose any four courses from the following list:		
PHYS 502 Quantum Physics (3)		
PHYS 506 Thermodynamics and Statistical Physics (3)		
PHYS 531 Optical Physics (3)		
PHYS 634 Solid State Materials and Devices (3)		
MATH 580 Advanced Numerical Analysis (3)		
Design Course and Thesis	6	
PHYS 639 Design of Solid State Systems and Sensors (3) or		
PHYS 649 Design of Integrated Modeling and Simulation Environments (3)		
Students in these courses are required to attend all theses proposals and defenses that occur during the course.		
PCSE 699 Thesis Research (3) can be taken only upon successful completion of PHYS 639 or PHYS 649 design course. Thesis may be taken in one credit increments.		
or		
Non-Thesis Option		12
12 credit hours of electives from the M.S. in Applied Physics and Computer program		
Total	30	36

M.S. in Applied Physics and Computer Science Courses of Instruction

Physics

PHYS 501. Models of Dynamical Systems (3-3-0)

Prerequisites: Math through differential equations and graduate standing in the department 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 and graduate standing within the department or permission of instructor. Odd 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 Shroedinger 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 503. Data Acquisition and Instrumentation (3-3-0)

Prerequisites: Graduate standing within the department or permission of instructor. 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.

PHYS 504. Electromagnetic Theory (3-3-0)

Prerequisites: PHYS 304 or MATH 350; graduate standing within the department or permission of instructor. Even 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 (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 (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.

PHYS 522. Microprocessor-based Systems (3-3-0)

Prerequisites: Graduate standing in the department or permission of the instructor. Spring
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 523. Computer Architecture, Advanced Topics (1-1-0)

Prerequisites: ENGR 414 or equivalent. Spring
A one-credit course in advanced computer architecture for students with a solid undergraduate background in the topic. Students may not take both PHYS 521 and 523.

PHYS 524. Microprocessor-based Systems, Adv. Topics (1-1-0)

Prerequisites: PHYS 422 or equivalent. Spring
A one-credit course in advanced microprocessor-based systems for students with a solid undergraduate background in the topic. Students may not take both PHYS 522 and 524.

PHYS 531. Optical Physics (3-3-0)

Prerequisites: Graduate standing in the department or permission of the instructor. Odd Fall
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 (3-3-0)

Prerequisites: PHYS 501, PHYS 502, MATH 580, CPSC 501, C or FORTRAN 90. Even Fall
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 (examples: mechanics, optics, fluids, waveguides, atmospheric propagation, or nonlinear system). Alternatively, the student may choose to write a simulation (examples: 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 undergraduate course.

PHYS 595. Advanced Topics in Physics (Credit varies)

Course topics are selected on the basis of faculty and student interests.

PHYS 599. Independent Study. 1-4 Credits.

PHYS 621. Digital Signal Processing (3-3-0)

Prerequisites: PHYS 503, PHYS 522. Even 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 629. Instrumentation Systems Design (3-3-0)

Prerequisites: PHYS 521, PHYS 522, completion of 12-15 hours of program requirements and have chosen a thesis advisor.
This advanced instrumentation systems course is directed at understanding a comprehensive systems problem and formulating a design approach based on sound computer engineering principles. This course is a precursor to the student's thesis work in Computer Systems Engineering and Instrumentation concentration. Students select computer system research areas and formulate problem solving approaches under instructor supervision. Background research, trade off studies and alternative implementations are explored. Each student presents a thesis proposal and is examined orally on topics related to his or her proposal. During this Thesis Proposal/Oral Comprehensive Exam students must demonstrate a basic knowledge in areas related to their proposed thesis to receive a passing grade. Students in this course are required to attend all theses proposals and all defenses of thesis that occur during the course.

PHYS 631. Physics of Solids (3-3-0)

Prerequisites: PHYS 502 and PHYS 506 or permission of instructor. Odd Fall
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.

PHYS 632. Lasers and Photonics (3-3-0)

Prerequisites: PHYS 631.
This course provides a survey of fundamental optical properties of matter and how they are employed in modern optical devices. The course focuses on laser physics and the varied use of lasers in meteorology. Includes a discussion of optical fibers for use in communications and sensors.

PHYS 634. Solid State Materials and Devices (3-3-0)

Introduction to theory of the solid state. Application of the theory to describe the behavior of solid state materials such as superconductors and optical elements that form the building blocks of devices. Overview of applications of these devices. Laboratory experimentation.

PHYS 639. Design of Solid State Systems and Sensors (3-3-0)

Prerequisite: Completion of 12-15 hours of program requirements and have chosen a thesis advisor.
A design course to integrate knowledge acquired in the solid state program into a research/design effort. Each student presents a thesis proposal and is examined orally on topics related to his or her proposal. During this Thesis Proposal/Oral Comprehensive Exam students must demonstrate a basic knowledge in areas related to their proposed thesis to receive a passing grade. Students in this course are required to attend all theses proposals and all defenses of thesis that occur during the course.

PHYS 649. Design of Integrated Modeling and Simulation Environments (3-3-0)

Prerequisite: PHYS 631, completion of 12-15 hours of program requirements and have chosen a thesis advisor.

Conceptualize, design, develop and test an integrated computational environment suitable for the modeling and simulation of systems, and the appropriate presentation of results therefrom. Each student presents a thesis proposal and is examined orally on topics related to his or her proposal. During this Thesis Proposal/Oral Comprehensive Exam students must demonstrate a basic knowledge in areas related to their proposed thesis to receive a passing grade. Students in this course are required to attend all theses proposals and all defenses of thesis that occur during the course.

PCSE 699. Thesis Research (3 Credits)

Prerequisite: Successful completion of CPSC 619, PHYS 629, PHYS 639, or PHYS 649.
Students in this course are required to attend all thesis proposals and defenses that occur during the course.

Computer Science

CPSC 501. Software System Design & Implementation (3-3-0)

Prerequisites: Grad. standing or permission of the instructor. Fall
The management, specification, design, implementation and documentation of complex software systems. A major project is to be done in the last half of the course. 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 permission of the instructor. Summer
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 (3-3-0)

Prerequisites: Graduate standing within the department. Fall
The purpose of this course is to introduce students to the basic elements of artificial intelligence with an emphasis on applications such as neural nets and heuristic search.

CPSC 521. Computer Architecture (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 with C++ (3-3-0)

Prerequisites: Graduate standing and ability to program in C, or permission of the instructor. Spring
Basic object-oriented design and applications of C++. This course introduces the subset of C++ which is of the most practical use. It introduces object-oriented design methods and provides guidance in the effective implementation of object oriented programs using C++. Substantive, additional work in the form of more advanced

assignments and projects are required to distinguish this class from the cross-listed undergraduate course.

CPSC 550. Distributed Operating Systems (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 undergraduate course.

CPSC 560. Introduction to Compilers (3-3-0)

Prerequisites: CPSC 550. 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 undergraduate course.

CPSC 570. Theoretical Computer Science (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 undergraduate course.

CPSC 585. Principles and Applications of Multimedia (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 will also address 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.

CPSC 599. Independent Study. 1-4 Credits.

CPSC 611. Communications II (3-3-0)

Prerequisite: CPSC 502. 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 619. Computer Systems Design (3-3-0)

Prerequisites: Completion of 12-15 hours of program requirements and have chosen a thesis advisor.
A design course to integrate knowledge acquired in the program into a research/design effort and to serve as a structure for beginning the research/design effort. Each student presents a thesis proposal and is examined orally on topics related to his or her proposal. During this Thesis Proposal/Oral Comprehensive Exam students must demonstrate a basic knowledge in areas related to their proposed thesis to receive a passing grade. Students in this course are required to attend all theses proposals and all defenses of thesis that occur during the course.

CPSC 621. Parallel Processing (3-3-0)

Prerequisite: PHYS 521. Odd Spring
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. Even Spring
Topics in artificial intelligence. Content will vary. Possible topics include advanced neural nets, qualitative reasoning, and natural language processing.

Mathematics

MATH 580. Advanced Numerical Analysis (3-3-0)

The course covers a range of topics in numerical analysis concentrating on an introduction to finite elements and their applications. Use of a software package and research journal readings are required.

M.S. in Applied Psychology in Industrial/Organizational Psychology

A master's degree in Industrial/Organizational Psychology is a key to advancement in career areas such as human resources and personnel, training, employee relations, organizational and human resources research, organizational development and organizational consulting. Industrial/Organizational (I/O) psychologists are concerned with the relation between people, work, and organizations.

The graduate program curriculum follows the scientist-practitioner model in psychology. This means the students are given a strong foundation in psychological theory and research as well as the knowledge, skills, and abilities to apply psychology to organizational settings. The Council for Applied Masters Programs in Psychology recommends that students have a background in the more traditional areas of psychology as well as in the specialty area.

Employment opportunities include business, industry and government settings. For instance, an I/O psychology trained human resource specialist or consultant may work with an organization to develop and implement training and management development programs, selection and performance appraisal systems, organizational development and change programs, and various innovations designed to improve productivity, service quality, and employee quality of worklife. The degree is also an asset for managers, business owners and others who seek to enhance knowledge, skills and/or credentials.

The Master of Science in Applied Psychology with a concentration in Industrial/Organizational Psychology

The Department of Psychology offers two graduate level programs, a Master of Science in Applied Psychology with a concentration in Industrial/Organizational Psychology and a Certificate in Organizational Leadership. Both programs are designed to instruct individuals to apply the concepts, methods, principles and knowledge of psychology to people at work. The programs use the scientist-practitioner model to develop knowledge and skills in the application of psychological principles to enhance organizational functioning from both the organizational and human perspectives. Graduates of the program work in human resource and personnel areas such as selection, training, program evaluation, job analysis, testing, work motivation, group processes, performance appraisal, test validation, organizational development, teambuilding, work performance enhancement, leadership development, and job design.

Admission Requirements for Degree-seeking Students

1. A baccalaureate degree from a regionally accredited college or university with a minimum grade point average of 3.00 on a 4.00 scale, and a psychology course grade point average of at least of 3.00 on a 4.00 scale.
2. An official transcript from the baccalaureate institution, and official transcripts for all graduate work taken at other institutions.
3. Three letters of recommendation written by persons qualified to judge the applicant's potential to complete the graduate program successfully. All recommendations must arrive in unopened envelopes with the reference's signature across the envelope flap.
4. Combined scores of 950 or higher on the quantitative and verbal sections of the Graduate Record Examination taken within five years prior to the date of admission.
5. An essay, not to exceed two-double spaced typewritten pages in length, describing the applicant's interest in I/O Psychology. Include a discussion of specific topic areas, research interests, and/or applications that are of interest. Feel free to describe the ways in which this degree fits into personal career objectives.

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. Students seeking non-degree admission status must have a grade point average of at least 3.0 on a 4.0 scale. Non-degree status is not intended to be used as a qualifying program for degree-seeking status. The request for a change in status is reviewed by the department faculty. Applicants are not assured that such requests will be granted. Should a non-degree student desire additional courses beyond the 12 credit limit, he or she may petition the Program Coordinator 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.

Academic Prerequisites

Students will need to provide evidence of satisfactory completion of undergraduate courses in

- a. introductory psychology;
- b. statistics; and
- c. experimental psychology or research methodology.

Goals of the Program

The program curriculum and requirements will contribute to the achievement of instructional goals in the following areas:

1. Content knowledge of the core areas within psychology:
 - a. Biological bases of behavior;
 - b. Principles of behavior acquisition and change;
 - c. Principles of social behavior;

d. Individual or unique bases of behavior.

2. Methodology of psychology:

- a. Research design and skill in designing field research;
- b. Statistics;
- c. Psychometric theory;
- d. Computer analysis of research data;
- e. Use and interpretation of survey and measurement instruments;
- f. Communication of knowledge through written and oral channels.

3. Design and implementation of selection programs, training programs, job design, performance appraisal, survey instruments, organizational assessment and diagnosis, supervisory training and other organizational programs.

4. Application of knowledge of the discipline to work settings.

Curriculum

The student chooses either the 33 hour program which requires 27 course hours, plus 6 hours of thesis, or the 36 hour program which requires 33 course hours, plus a 3 credit practicum. The curriculum has been designed to expose graduate students to the core topics in psychology and concentration courses that focus on the application of psychological theory and research in organizational settings.

M.S. in Applied Psychology with a Concentration in Industrial/Organizational Psychology Program of Study 33-36 Credits			
		Thesis	Non-thesis
		15	
Core Courses 15			
PSYC 502	Statistics II: Multivariate Analysis* (3)		
PSYC 504	Advanced Social Psychology (3)		
PSYC 506	Professional Seminar in Psychology (3)		
PSYC 601	Advanced Research Methods (3)		
PSYC 610	Advanced Test and Measurements (3)		
Concentration Courses			
PSYC 503	Training and Development in Organizations (3)	12	12
PSYC 513	Group Dynamics (3)		
PSYC 623	Organizational Psychology (3)		
PSYC 633	Advanced Personnel Psychology (3)		
Thesis			
PSYC 699	Thesis Research (6)	6	
or			
Non-Thesis Option			
PSYC 691	Graduate Practicum in Industrial/Organizational Psychology (3)		9
PSYC	Electives from the M.S. in Applied (I/O) Psychology program (6)		
Total		33	36
* A statistics placement test is required.			

Certificate in Organizational Leadership (COL)

Certificate students may be admitted as degree-seeking or as non-degree seeking students. The COL requires the successful completion of 12 COL graduate credits (no transfer credits allowed) as follows:

PSYC 503	Organizational Development and Training
PSYC 513	Group Dynamics
PSYC 595	Advanced Topics: Leadership in Organizations
PSYC 623	Organizational Psychology

Participation in or completion of the Certificate will not automatically qualify a student for admission into the MSAP degree program. Should a student earning a Certificate wish to earn a Master's degree he/she will be required to apply for degree seeking status.

Graduation Requirements

- Successful completion of minimum hours of the M.S. in Applied (I/O) Psychology degree program course work;
- Passing score on the examination in general psychology by the completion of 30 hours of graduate course work;
- An overall graduate grade point average of 3.00 in all CNU courses submitted for graduate credit with no more than two grades of C;
- Registration and timely petition for candidacy prior to the final semester;
- Passing score on the comprehensive examination, demonstrating knowledge and competence in the concentration area at the completion of all concentration courses; and
- Successful defense of thesis and presentation of the appropriate number of approved copies to the Graduate Studies Office by the published deadline or successful defense of practicum portfolio and presentation of approved practicum report by published deadline.

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. Refer to page 79 for specific terms, criteria and application procedures.

For further information:

Contact the Program Coordinator at (757) 594-7934 or psycgrad@cnu.edu, or visit the web site at <http://www.cnu.edu/academics/psyc>.

M.S. in Applied (I/O) Psychology Courses of Instruction

PSYC 501. Statistics I: Design and Analysis (3-3-0)

Covers topics in the bivariate distribution; introduces the basic linear regression model. Includes basic topics in research design, data analysis and A.P.A. style; those ANOVA designs that represent a large portion of published research; the theoretical and mathematical issues that are of concern to the modern researcher. Computer examples of data analyses using SPSS or other statistical packages are used to provide practical experience with analysis problems and the interpretation of interactions.

PSYC 502. Statistics II: Multivariate Analysis (3-3-0)

Prerequisite: PSYC 501 or statistics placement test.

Topics in advanced statistics include: Multiple Regression, Factor Analysis, MANOVA and Discriminate Analysis. The logical properties of multivariate techniques and interpretation on research results are stressed. Multiple regression analysis and factor analysis are compared and studied in detail. Data are analyzed using SPSS or other statistical packages. This course covers the various strengths and weaknesses involved in the multivariate analyses.

PSYC 503. Training and Development in Organizations (3-3-0)

The process of training in organizations is a major focus of this course and includes: training needs assessment and assessment methods, setting training objectives, choosing appropriate training methods, and evaluation of the training program. Other related

topics covered include learning issues in training, training particular populations, and training and legal issues. Professional ethics, the delivery of services in organizations, and professional identity are also addressed in this course.

PSYC 504. Advanced Social Psychology (3-3-0)

An in-depth examination of the primary theories and research methodology used in Social Psychology. Students are responsible for leading seminar discussions focusing on such topics as Social Cognition, Attitude Formation, Persuasion, Prejudice and Discrimination, Social Influence, Social Interaction, Group Processes, and Applications of Social Psychology. Students are expected to apply course concepts to real-world situations and provide comprehensive analyses of the dynamics of the situations.

PSYC 505. Social Perception, Learning and Cognition: Problem Solving and Decision Making (3-3-0)

Principles of social perception, learning and cognition applied to problem solving and decision making. Students study major contemporary theorists and their models.

PSYC 506. Professional Seminar in Psychology (3-3-0)

Course provides an overview of theory and research in the core areas of psychology, including the biological bases of behavior, measurement theory, principles of social behavior, and individual or unique bases of behavior. The course also focuses in greater depth on the principles of behavior acquisition and change, including social perception, cognition, and learning theory.

PSYC 513. Group Dynamics (3-3-0)

An experiential course on the topics of communication, group goal structure, leadership, decision making, controversy, and conflict in small groups. Students work in small groups to develop and facilitate experiential group exercises illustrating these processes. The class operates as a human relations laboratory where course topics are experienced and analyzed through action learning.

PSYC 523. Organizational Theory (3-3-0)

An in-depth study of the characteristics of organizations and the concepts of organization theory. The focus of the course stresses an open-system perspective which assesses environmental as well as intra-organizational dimensions, informal as well as formal organizational structures and processes, and institutional/social as well as operational/technical levels of management. The course is designed to view organizations as "learning environments" in which participants solve real problems.

PSYC 595. Advanced Topics in Psychology (Credit varies)

Course topics are selected on the basis of faculty and student interests.

PSYC 599. Independent Study (1-6 Credits)

PSYC 601. Advanced Research Methods (3-3-0)

Prerequisite: PSYC 501.

This course covers research design and methods applicable to organizational settings. Topics include advanced techniques in experimental, quasi-experimental, and correlational research designs, advanced survey methods, threats to internal and external validity, and ethics in organizational research. Students read primary source material on research design and develop a thesis-quality research proposal.

PSYC 610. Advanced Tests and Measurements (3-3-0)

Prerequisite: PSYC 501.

Course topics include the nature, purposes, uses and development of various psychological tests and measurements. Measurement instruments examined in the course include intelligence tests, personality measures, measures of attitudes and interests, and measures of aptitudes and special abilities.

PSYC 623. Organizational Psychology (3-3-0)

Course provides an in-depth analysis of theories and issues concerned with work attitudes, work motivation, organizational change, job design, organizational climate and culture, and leadership.

PSYC 633. Advanced Personnel Psychology (3-3-0)

Prerequisite: PSYC 501.

Course presents research and theory applying psychological principles to the development and management of the Personnel/Human Resources function in organizations. Topics include selection and selection testing, performance measurement and appraisal, and equal employment opportunity and the law. Psychometric theory and statistical analysis of personnel data are emphasized.

PSYC 691. Graduate Practicum in I/O Psychology (3-3-0)

Prerequisites: Completion of the I/O concentration courses.

Students receive supervised training in an applied setting in the area of I/O psychology. The student has an on-site practicum supervisor and a faculty supervisor. Pass/Fail Course.

PSYC 699. Thesis Research (6 Credits, taken in increments)

The student may not proceed beyond the first credit without committee approval of the proposal.



An Environmental Science graduate professor working with students.

M.S. in Environmental Science

The Biology, Chemistry and Environmental Science faculty are actively engaged in teaching and research. As an example, Dr. Robert Atkinson received an Environmental Protection Agency grant to study and to monitor the Atlantic White Cedar restoration efforts in the Great Dismal Swamp and other selected locations. Graduate and undergraduate students, along with faculty, are involved in the restoration project.

Another grant, funded by NASA, is allowing students to work with Dr. Gary Whiting who is investigating methane gas production in wetlands and its effects on global warming.

All departmental course offerings are taught in the newly remodeled 16,000 square foot science building containing 14 modern and exceptionally well-equipped laboratories and 23 support areas. Three walk-in controlled environment chambers and a new greenhouse complement the facilities. Additionally, the department has large ecological study sites in rural Gloucester County, and at the Hoffer Creek Nature Preserve in Portsmouth, and a forestry research area in New Kent, all which support staff and student research. Nearby Lake Maury is used for aquatic research.

The Master of Science in Environmental Science

This degree program is designed for students planning to pursue a Ph.D., or teachers wanting a M.S. in a biological science, or for students interested in careers with governmental agencies; consequently, it is flexible enough to fit the interest and needs of a wide variety of students.

The core courses are those mentioned most frequently by employers, consultants and educators as those needed for successful employment. The remainder of the course offerings is designed to enhance the understanding of ecology and the natural history of organisms. Many of these courses involve or even consist entirely of field work since the majority of the employers surveyed are seeking graduates with a first-hand knowledge of the environment and environmental assessment methods.

Admission Requirements for Degree-seeking Students

1. A baccalaureate degree from a regionally 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, 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. All recommendations must arrive in unopened envelopes with the reference's signature across the envelope flap.
4. Scores from the Graduate Record Examination General Test taken within five years prior to the date of admission. GRE scores are used as one of several indicators of the applicant's ability to succeed in graduate studies; they are never the sole criterion for admission, nor is there a minimum acceptable or cutoff score. For those applicants already holding a master's degree, the GRE may be waived by permission of the Director of Graduate Studies. A letter to the Director requesting a waiver is required.

Academic Policy for Non-degree Students

Students seeking non-degree admission status must have a grade point average of at least 3.0 on a 4.0 scale. 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, he or she may petition the Program Coordinator 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.

Academic Prerequisites

Students will need to provide evidence of satisfactory completion of the following undergraduate courses: complete sequences of general and organic chemistry, general ecology, botany, zoology, cell or molecular biology, genetics, microbiology, and statistics.

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 is a degree program which consists of a minimum of thirty hours of courses and six hours of thesis. An oral defense of the thesis is required. Most of the 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. A major and unique component of this program is the one-week technique-intensive summer field camp. Most courses beyond the core courses may be taken in any sequence.

M.S. in Environmental Science Program of Study 36 Credits

Core Courses (12 Credits)

- BIOL 510 Biometry Laboratory (2)
ENVS 505 Technical and Scientific Writing (2)
ENVS 518 Biological Conservation: Theory and Practice (3) or
ENVS 519 Restoration Ecology (3)
ENVS 522 Summer Field Studies (2)

Concentration Courses (18 Credits)

- BIOL 530 Biogeography (4)
BIOL 534 Marine Ecology (4)
BIOL 538 Limnology and Aquatic Biology (4)
CHEM 545 Instrumental Methods in Chemistry (4)
CHEM 555 Environmental Instrumental Analysis (1)
CHEM 585 Advanced Instrumental Analysis (1)
ENVS 520 Conservation and Mitigation Methods Seminar (3)
ENVS 525 Environmental Regulations (3)
ENVS 532 Wetlands Ecology (4)
ENVS 536 Terrestrial Ecology (4)
ENVS 540 Environmental Microbiology (4)
ENVS 550 Global Change (3)
ENVS 588 Environmental Geology (4)
ENVS 589 Soil Science (4)
ENVS 590 Topical Seminars in Environmental Science (1-4 Cr.)

Thesis (6 Credits)

- ENVS 699 Thesis Research

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, be enrolled in 6-9 graduate credit hours in the semester of the award. Refer to page 79 for specific terms, criteria and application procedures.

Internships with environmental departments of municipalities, resource agencies, laboratories, and engineering firms are available. The student gains practical experience in a work place environment learning detailed methods of site evaluation, environmental assessment and technical report preparation. Many of the internships offer financial support to the student.

Graduation Requirements

- Successful completion of minimum hours of the M.S. in Environmental Science degree program course work;
- An overall graduate grade point average of 3.00 in all CNU courses submitted for graduate credit with no more than two grades of C;
- Registration and timely petition for candidacy prior to the final semester;
- Successful completion of the comprehensive examination; and
- Successful defense of thesis and presentation of the appropriate number of approved copies to the Graduate Studies Office by the published deadline.

M.S. in Environmental Science Courses of Instruction

Biology

BIOL 510. Biometry (3-3-0)

Prerequisites: Introduction to Statistics or equivalent course.

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.

BIOL 510L. Biometry Laboratory (2-0-3)

Corequisite: BIOL 510.

Develops skills in the use of statistical software packages including relational databases.

BIOL 530. Biogeography (4-3-4)

The study of the patterns of distributions of organisms, both past and present and the abiotic and biotic factors that produced those distributions.

BIOL 534. Marine Ecology (4-3-4)

Prerequisites: BIOL 407-General Ecology, and consent of instructor.

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. Extensive field and boat work.

BIOL 538. Limnology and Aquatic Biology (4-3-4)

Prerequisites: BIOL 407-General Ecology, and one year of Chemistry.

Interactions of physical, chemical and biological properties in natural and degraded freshwater ecosystems. Emphasis on application of field data gathering, processing and functional classification of organisms in aquatic communities. Extensive field and laboratory work.

BIOL 595. Advanced Topics in Biology (Credit varies)

Course topics are selected on the basis of faculty and student interests.

BIOL 599. Independent Study (1-6 Credits)

BIOL 699. Thesis Research (6 Credits, taken in increments)

The student may not proceed beyond the first credit without thesis committee approval of the proposal.

Chemistry

CHEM 545. Instrumental Methods in Chemistry (4-2-5)

Prerequisites: General Physics 201-202 and Organic Chemistry 321/321L-322/322L.

Application of chemical principles to instrumentation. Instruction in operation of a variety of modern instruments.

CHEM 555. Environmental Instrumental Analysis (1-3-3)

Prerequisite: CHEM 445 or 545-Instrumental Methods in Chemistry.

Analytical methods for the analysis of environmentally significant substances in both trace and macroscopic abundances using modern instrumental methods. Analyses include both desirable and objectional impurities in air and water, such as oxygen in water samples and heavy metal in water, and trace gases and other atmospheric impurities. Emphases in AA and GC-MS with other instruments used as needed.

CHEM 585. Advanced Instrumental Analysis (1-3-3)

Prerequisite: Chemistry 445 or 545-Instrumental Methods in Chemistry.

An independent study project, particularly arranged for those working in an analytical testing laboratory. Student and instructor select a problem to be solved, either in the laboratory at the University or at the place of employment (or jointly). Emphasis is on utilizing instruments available to the student in the workplace.

Environmental Science

ENVS 505. Technical and Scientific Writing (2-2-0)

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 518. Biological Conservation: Theory and Practice (3-3-0)

Prerequisites: BIOL 407-General Ecology.

Biological conservation is a relatively new, applied discipline having more ethical and sociopolitical ramifications than is typical of nonmedical 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 then 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)

Prerequisites: BIOL 407-General Ecology.

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 522. Summer Field Studies (2-0-2)

Prerequisites: BIOL 505 Technical and Scientific Writing, BIOL 510/510L Biometry, ENVS 520 Conservation and Mitigation Methods Seminar.

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 boatwork required. An additional day on campus is required for student presentations.

ENVS 525. Environmental Regulations (3-3-0)

A seminar designed to explore current environmental regulations and their impact on various constituents.

ENVS 532. Wetlands Ecology (4-3-4)

Prerequisites: BIOL 407-General Ecology, and one year of Chemistry.

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. Field exercises to local wetlands are included.

ENVS 536. Terrestrial Ecology (4-3-4)

Prerequisites: BIOL 407-General Ecology.

A study of the structure and function of terrestrial systems focusing on the distinctive landscapes of the mid-Atlantic coastal region. Concepts will cover population, community and ecosystem ecology of plants and animals within these systems with attention given to the processes and functions that are distinct within and common among these systems. Field exercises are included.

ENVS 540. Environmental Microbiology (4-3-4)

Prerequisites: General Microbiology, BIOL 407-General Ecology, two semesters of organic chemistry, plus BIOL 550-Technical Writing and BIOL 510/510L-Biometry and Lab.

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 adicophiles in mine tailings). In the laboratory, students learn classic environmental testing procedures and novel new assessment procedures that have their roots in biochemistry and molecular biology.

ENVS 550. Global Change (3-3-0)

Prerequisites: BIOL 407-General Ecology.

An examination of the evidence for and causes of global change. The impact of changes in the global cycles of C, N, P and H₂O 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 588. Environmental Geology (4-3-4)

Prerequisite: BIOL 587-Physical Geology.

Investigation of the environmental impact of geological processes and the geological aspects of environmental degradation. Includes geological hazards such as flooding, landslides, earthquakes, volcanoes, coastal hazards, and concepts of hydrogeology, waste disposal, energy availability, and land use that are important in environmental assessment. Field work.

ENVS 589. Soil Science (4-3-4)

Prerequisite: One year of organic chemistry, BIOL 587-Physical Geology.

The scientific investigation of the physical, chemical, and biotic aspects of soils. Important chemical and physical properties and their functioning are considered, as well as soil taxonomy. The impact of human activities on all aspects of the soil resource is discussed.

ENVS 590. Topical Seminars in Environmental Science (1-4 credits)

Prerequisites: These vary depending on the topic offered.

A variety of environmental science related topics not available in the regular curriculum are offered. These courses will be designed to fill a particular need not met by the regular courses or may be designed to use the talents of an environmental scientist who is not part of the faculty.

ENVS 595. Advanced Topics in Environmental Science (Credit varies)

Course topics are selected on the basis of faculty and student interests.

ENVS 599. Independent Study (1-6 Credits)

ENVS 699. Thesis Research (6 Credits, taken in increments)

The student may not proceed beyond the first credit without thesis committee approval of the proposal. restoration apply these concepts. Field exercises to local wetlands are included.

ENVS 536. Terrestrial Ecology (4-3-4)

Prerequisites: BIOL 407-General Ecology

A study of the structure and function of terrestrial systems focusing on the distinctive landscapes of the mid-Atlantic coastal region. Concepts will cover population, community and ecosystem ecology of plants and animals within these systems with attention given to the processes and functions that are

distinct within and common among these systems. Field exercises are included.

ENVS 540. Environmental Microbiology (4-3-4)

Prerequisites: General Microbiology, BIOL 407-General Ecology, two semesters of organic chemistry, plus BIOL 550-Technical Writing and BIOL 510/510L-Biometry and Lab

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). In the laboratory, students learn classic environmental testing procedures and novel new assessment procedures that have their roots in biochemistry and molecular biology.

ENVS 550. Global Change (3-3-0)

Prerequisites: BIOL 407-General Ecology

An examination of the evidence for and causes of global change. The impact of changes in the global cycles of C, N, P and H₂O 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 588. Environmental Geology (4-3-4)

Prerequisite: BIOL 587-Physical Geology

Investigation of the environmental impact of geological processes and the geological aspects of environmental degradation. Includes geological hazards such as flooding, landslides,

earthquakes, volcanoes, coastal hazards, and concepts of hydrogeology, waste disposal, energy availability, and land use that are important in environmental assessment. Field work.

ENVS 589. Soil Science (4-3-4)

Prerequisite: One year of organic chemistry, BIOL 587-Physical Geology

The scientific investigation of the physical, chemical, and biotic aspects of soils. Important chemical and physical properties and their functioning are considered, as well as soil taxonomy. The impact of human activities on all aspects of the soil resource is discussed.

ENVS 590. Topical Seminars in Environmental Science (1-4 credits)

Prerequisites: These vary depending on the topic offered

A variety of environmental science related topics not available in the regular curriculum are offered. These courses are designed to fill a particular need not met by the regular courses or may be designed to use the talents of an environmental scientist who is not part of the faculty.

ENVS 595. Advanced Topics in Environmental Science (Credit varies)

Course topics are selected on the basis of faculty and student interests.

ENVS 599. Independent Study (1-6 Credits)

ENVS 699. Thesis Research (6 Credits, taken in increments)

The student may not proceed beyond the first credit without thesis committee approval of the proposal.

Master of Public Safety Leadership

The Master of Public Safety Leadership degree is unique in its orientation to the challenge of promoting and ensuring the future safety of the public. This program is designed to link public safety leaders into a functioning network of practitioners.

Courses are offered through classroom sections and CNU ONLINE, an Internet-based asynchronous system, which allows course flexibility for students unable to commute to the campus.

Related CNU programs are the Mid-Atlantic Police Supervisory Institute, Mid-Atlantic Corrections Supervisory Institute, Public Management Institute, Center for Community Safety Leadership and The Joseph Center.

The program prepares supervisors and future organizational leaders for the demands of protecting the public efficiently and effectively in the twenty-first century. In-service graduates are prepared to assume supervisory or executive leadership roles within their employment organizations. Pre-service graduates are prepared for entry-level and first-line supervisory positions in public safety and city/county management.

The Master of Public Safety Leadership

The Department of Government and Public Affairs offers two graduate level programs, the Master of Public Safety Leadership (MPSL) and the Certificate in Public Safety Management (CPSM). Both programs offer graduate-level leadership and management skill development and a systems approach to coordinate the work of public safety agencies. The Master of Public Safety Leadership is unique and the only program of its kind in the Commonwealth.

The curriculum of both programs emphasize leadership development through an integrated approach to public safety. This is based on the critical need for all public safety agencies to work closely together as they provide for the needs of citizens in emergency situations as well as in day-to-day life. The program is focused on developing personnel in law enforcement, corrections, fire safety, and related emergency management areas.

These two graduate programs are offered on an Intensive Semester basis. *This innovative strategy allows individuals to pursue their full-time careers while they seek the benefits associated with post-graduate educational advancement.* For each course, students meet in the classroom one evening every three weeks, with the remainder of the course work communication utilizing CNU ON LINE, the university's asynchronous, Internet-based teaching medium.

Admission Requirements for Degree-seeking Students

1. A baccalaureate degree from a regionally 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, and official transcripts for all graduate work taken at other institutions.
3. Three letters of recommendation written by persons qualified to judge the applicant's potential to complete the graduate program successfully. All recommendations must arrive in unopened envelopes with the reference's signature across the envelope flap.
4. Scores from the Graduate Record Examination General Test taken within five years prior to the date of admission. GRE scores are used as one of several indicators of the applicant's ability to succeed in graduate studies; they are never the sole criterion for admission. For those applicants already holding a master's degree the GRE may be waived by permission of the Director of Graduate Studies. A letter to the Director requesting a waiver is required.

Academic Policy for Non-degree Students

Students seeking non-degree admission status must have a grade point average of at least 3.0 on a 4.0 scale. 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, he or she may petition the Program Coordinator 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.

Goals of the Program

- The curriculum of this program will contribute to the growth in the following desirable leader qualities:
1. Knowledge of leadership theories and practices.
 2. Understanding of the public safety system to achieve public objectives.
 3. Understanding how citizens and employees learn and change.
 4. Technical skills in telecommunications: presentation, spreadsheet, database, and statistical analysis software, and political analytic/decision making approaches.
 5. Professional identification with a commitment to systems approach to services delivery, ethical standards, leadership role in the public safety and political systems, and the mission of public safety.
 6. Willingness to assist colleagues and new professionals in the field.

Curriculum

The focus of the program is on leadership and interagency coordination. The curriculum begins with the Area I foundation course, Issues in Public Safety Leadership. Students analyze critical issues in public safety which create the need for integration and systems perspective. Area II is grounded upon

translating an organization's mandate into effective strategies to create value in the public sector. The specialty courses in Area III are designed to allow students to particularize their studies to specific professions. The capstone courses of Area IV permit students to select directed readings/internships or directed readings/professional paper. Area IV also includes directed readings/comprehensive exam and the capstone leadership course.

Master of Public Safety Leadership Program of Study 36 Credits

Area I The Foundation (6 Credits)

Political Theory, Public Safety Leadership and Public Law

- GOVT 500 Issues in Public Safety Leadership (3)
GOVT 501 Legal Issues in Public Safety (3)

Area II The Core (12 Credits)

Public Safety System and Organizational Leadership

- GOVT 552 Quantitative Analysis (3)
GOVT 561 Policy Analysis (3)
GOVT 581 Human Resources Management (3)
GOVT 591 Budgeting and Grantsmanship (3)

Area III Specialty Courses (9 Credits)

- GOVT 600 Community Oriented Justice (3)
GOVT 620 Integrated Emergency Services (3)
GOVT 640* Public Safety Information Management (3)
GOVT 655 Ethical Issues in Public Safety (3)
GOVT 595 Topics in Public Safety Leadership (3)
GOVT 599 Independent Study in Public Safety Leadership (1-3)

Area IV Capstone Courses (9 Credits)

- GOVT 690 Leadership Integration of Public Safety Services (3)
GOVT 691 Directed Readings/ Comprehensive Exam (3)
and one of the following:
GOVT 692 Directed Readings/Professional Paper (3) or
GOVT 693 Directed Readings/ Internship (3)

**Pending approval of the Graduate Faculty Council and the University Provost*

Comprehensive Examination

Students are eligible only if they have completed at least 18 hours of course work including GOVT 500, 501, 552, 561, 581 and 591. The written comprehensive examinations are offered semi-annually; one during March and one during October. The Department reserves the right to offer Comprehensive Examinations at any time, however. Students are limited to twenty-seven hours of completed course work if they have not passed the Comprehensive Examination.

Graduate Assistantships

Graduate assistants are employed to perform research, teaching and/or administrative activities 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, be enrolled in 6-9 graduate credit hours in the semester of the award. Refer to page 79 for specific terms, criteria and application procedures.

Graduation Requirements

- Successful completion of minimum hours of the Master of Public Safety Leadership degree program course work;
- An overall graduate grade point average of 3.00 in all CNU courses submitted for graduate credit with no more than two grades of C;
- Registration and timely petition for candidacy prior to the final semester;
- Successful completion of the comprehensive examination and
- Successful completion of capstone course requirements.

Master of Public Safety Leadership Five Year Program

This program allows undergraduate students pursuing public safety careers to complete a Bachelor of Science in Governmental Administration degree and the Master of Public Safety Leadership degree in a five-year time span. The successful student will receive the BSGA after four years and the MPSL degree after an additional year. Students may apply for this program following their sophomore year. This program will require undergraduate students to begin taking MPSL course work during their undergraduate years.

Admission Requirements:

1. An overall grade point average of 3.00 or higher for all undergraduate study;
2. Three letters of recommendation;
3. Acceptable scores on the GRE; and
4. A one-page, typed essay of 250 words describing the student's career aspirations, and the relationship between the program and the student's career goals.

Graduation Requirements:

1. Completion of all course requirements for the BSGA degree; and
2. Completion of all specified course and graduation requirements for the graduate degree including successful completion of the comprehensive exam, successful completion of capstone course requirements, and at least 36 hours of study with an overall graduate grade point average of 3.00 or higher.

Master of Public Safety Leadership Program of Study 36 Credits

Foundation Courses (6 credits - Suggest one each semester of senior year)

- GOVT 500 Issues In Public Safety Leadership (3)
GOVT 501 Legal Issues In Public Safety (3)

Core Courses (All required, 12 credits)

- GOVT 552 Quantitative Analysis (3)
GOVT 561 Policy Analysis (3)
GOVT 581 Human Resource Management (3)
GOVT 591 Budgeting and Grantsmanship (3)

Speciality Courses (Choice of 9 credits)

- GOVT 600 Community Oriented Justice (3)
GOVT 620 Integrated Emergency Services (3)
GOVT 640* Public Safety Information Management (3)
GOVT 655 Ethical Issues In Public Safety (3)
GOVT 695 Topics in Public Safety Leadership (3)
GOVT 699 Independent Study In Public Safety Leadership (3)

Capstone Courses (9 credits)

- GOVT 690 Leadership Integration of Public Safety Services (3)
GOVT 691 Directed Readings/Comprehensive Examination (3)

And one of the following:

- GOVT 692 Directed Readings/ Thesis (3) or
GOVT 693 Directed Readings/Internship (3)

**Pending approval of the Graduate Faculty Council and the University Provost*

Certificate in Public Safety Management (15 credits)

Certificate students may be admitted as degree-seeking or as non-degree seeking students. The CPSM requires successful completion of 15 graduate credits, with no transfer credits allowed. Participation in or completion of the certificate will not automatically qualify a student for admission into the MPSL degree program. Should a student earning a certificate wish to earn a master's degree he/she will be required to apply for degree-seeking status.

Foundation Courses 6 credits)

Required:

- GOVT 500 Issues in Public Safety Leadership (3)
GOVT 501 Legal Issues in Public Safety (3)

Core Courses (6 credits)

Choose two of the four core courses:

- GOVT 552 Quantitative analysis (3)
GOVT 561 Policy Analysis (3)
GOVT 581 Human Resources Management (3)
GOVT 591 Budgeting & Grantsmanship (3)

Specialty Courses (3 credits)

Choose one of the specialty courses from the MPSL program courses.

Master of Public Safety Leadership Courses of Instruction

GOVT 500. Issues in Public Safety Leadership (3-3-0)

The course examines the foundational concepts of leadership, contemporary societal concerns, and the critical issues in public safety leadership, especially as they present the need for inter-agency and inter-community coordination.

GOVT 501. Legal Issues in Public Safety (3-3-0)

This course presents an overview of constitutional and other legal issues that have evolved from the historical provision of public service in the fields of law enforcement, corrections, fire, rescue, emergency management and other areas of public administration. The focus is on the administrative and operational management of these public safety programs in the context of our American constitutional democracy.

GOVT 552. Quantitative Analysis (3-3-0)

The course is designed to assist students in developing their skills in quantitative analysis of information relevant to leaders in the public arena. The course focuses on research designs and basic data analysis techniques, including statistical analysis, measurement, hypothesis testing, multivariate analysis, and measures of association.

GOVT 561. Policy Analysis (3-3-0)

The course provides students with an advanced understanding of public policy analysis. The focus is on basic and complex methods for analyzing and resolving policy issues, particularly at the state and local levels. This includes the ability to define policy problems, establish evaluation criteria, identify and evaluate alternative policies, and monitor implemented policies.

GOVT 581. Human Resources Management (3-3-0)

This course presents an overview of the many challenges and operational personnel issues that managers and leaders are faced with in the routine provision of public service in city/county/state/federal government and non-profit organizations. The focus is on the administrative and operational human resource management of public programs in the context of American constitutional democracy.

GOVT 591. Budgeting and Grantsmanship (3-3-0)

The course explores budgeting as a decision making instrument for the allocation of funds and other resources to achieve goals and objectives in the management of an organization or system. Students review political aspects of the budget process, budgeting formats, accountability procedures and controlling fiscal resources. The course involves the use of electronic spreadsheets in the analysis of data, and also investigates the importance and relationship of grants in funding public activities. Students explore researching public and private grant sources, proposal development and grants management. Computer applications are employed to assist students in the identification of possible funding sources and the preparation of a proposal.

GOVT 600. Community Oriented Justice (3-3-0)

The course examines the movement to create an integrated model of services delivery among all components of the justice system. Community oriented justice is an outgrowth of community-based policing and incorporated fundamental concepts of proactivity, community coalitions and decentralization into all areas of public safety. Students explore opportunities to improve the delivery of public safety services and reduce costly duplication of effort by marshaling existing community resources.

GOVT 620. Integrated Emergency Services (3-3-0)

Examines the essential issues and elements of emergency preparedness, disaster recovery and mitigation, and fire/emergency medical services planning and delivery. Students evaluate existing plans, analyze political and budgetary issues,

read current literature regarding theories and research in the field, and design integrated plans for the public safety arena.

GOVT 640. Public Safety Information Management (3-3-0)

Studies in the complex field of educating the public, responding to the public's concerns, and leading the public to changed perceptions and behaviors. Reviews critical strategies of educating and responding to all public safety constituencies: elected government officials, the judiciary, the media and the public. Students evaluate educational and public relations plans, read current literature regarding theories of public relations, and design integrated plans for the public safety agencies.

GOVT 655. Ethical Issues In Public Safety (3-3-0)

Students will examine the myriad of ethical issues associated with the public safety in administrative and enforcement agencies. Principles of ethics will be applied in all case studies and the decision-making process will be evaluated in the context of leadership situations.

GOVT 690. Leadership Integration of Public Safety Services (3-3-0)

An examination of the leadership of communities, organizations, initiatives and change, recognizing the construct of leadership as being distinct form but related to management of organizations. Contemporary and historical leadership theories are explored in depth to gain an understanding of salient dimensions and elements of leadership. The role and influence of vision, values, culture, trust, empowerment, and follower-developments in the transformation of people and events are studies. The integrative role of city, county, state, and federal leaders is examined.

GOVT 691. Directed Readings/Comprehensive Examination. (3-3-0)

In conjunction with faculty, students will plan a reading strategy for the comprehensive examination. This examination evaluates the student's proficiency on the foundation courses (GOVT 500 & 501) and the core courses (GOVT 552, 561, 581, and 591). The exam is to be taken after completion of these 18 credit hours, and the exam must be passed before taking more than 27 total credit hours in the program.

GOVT 692. Directed Readings/Professional Paper (3-3-0)

Working closely with faculty, students will research, prepare and present a professional paper. Students investigate research questions relevant to the management and leadership integration of public safety systems. Students present the paper in a public forum. The topic of the paper must be approved by the student's committee and must directly relate to the field of public safety management or leadership integration.

GOVT 693. Directed Readings/Internship (3-3-0)

The internship is an opportunity for students to apply learned programs knowledge, skills and abilities in an applied setting. Weekly journal reports and a professional, technical paper that integrates theory and practice are required. The reports and paper will be judged by the student's faculty committee.

GOVT 695. Topics In Public Safety Leadership (3-3-0)

Topic courses may be presented on the basis of faculty and student interest.

GOVT 699. Independent Study In Public Safety Leadership

One to three hours limit. This course permits student and faculty to explore special research and theoretical issues.

NON-PROGRAM COURSES

The following section contains a description of the graduate courses offered by the University that are not within a graduate program curriculum.

Courses of Instruction

ECON 501. Current Economic Issues (3-3-0)

This course is designed for K-12 educators and is sponsored by the Virginia Council of Economic Education which provides funds for tuition reimbursement.

EDUC 503. Comparative Education (3-3-0)

This course analyzes the manner in which education is arranged and conducted in other nations. Examination of education and cultural relations among nations and the application of cross-cultural knowledge to classroom educational practice occurs.

EDUC 531. Strategies and Models for Teaching Gifted Learners (3-3-0)

This course will enable teachers to identify specific models of instruction and practice strategies appropriate for gifted learners.

EDUC 536. Characteristics of the Learning Disabled Student (3-3-0)

This course introduces the characteristics and complexities of the learning disabled student. Educational and psychological implications of the diagnostics/prescriptive approach to the learning disabled student are studied.

EDUC 550. Developmental Reading (3-3-0)

Course is designed to help teachers understand the psychology of the reading process, strategies for helping learners in the elementary school, current practices, and interrelationships with other subjects and activities in the curriculum. The application of theory and research to classroom practice is emphasized.

EDUC 552. Diagnostic Reading (3-3-0)

Course is designed to help classroom teachers diagnose students' strengths and weaknesses, provide for the growth of developmental learners, and correct the various kinds of problems which are grouped under the heading of reading disabilities.

MATH 572. Current Issues in School Mathematics (3-3-0)

In-depth exploration of current issues in mathematics education. Topics may include: the "problem solving" centered mathematics curriculum; participation and retention of females and minorities in mathematics; mathematics anxiety; using technology in teaching mathematics; the NCTM Curriculum and Evaluation Standards for School Mathematics.

MATH 574. Discrete Mathematics (3-3-0)

A course designed to expose students to the discrete aspects of mathematics. Course emphasizes: developing basic techniques and modes of reasoning in combinatorial problem solving; describing and analyzing the algebraic structure of certain sets; relation systems; and illustrating and analyzing the wide variety of applications of discrete mathematics. Topics include logic, sets, algorithms, mathematical induction, combinatorics, number theory, graph theory and Boolean algebra.

MATH 582. Introduction to Topology (3-3-0)

An introductory course in topology. Topics include sets and functions, topology spaces, metrics spaces, connectedness, compactness, countability and separation.

MATH 583. Mathematics in the Content Areas (3-3-0)

This course assists teachers in developing creative instructional approaches which integrate mathematics with other content areas (science, social studies, language arts, fine arts, physical education) and which instill in students enthusiasm and satisfaction in learning and using mathematics. The course provides opportunities to implement these methodological practices in the classroom.

MUSC 507. American Music (3-3-0)

A course in which music is studied as a part of America's cultural history. Beginning with music transported to the New World by the Pilgrims and the Puritans, musical activity is traced chronologically into the twentieth century. Among major topics discussed are the singing school movement, nineteenth-century popular music, the development of music education, American band music, the beginnings of jazz, the establishment of an indigenously American expression, and the coming of world prominence in music of the twentieth century.

MUSC 509. Paleography (3-2-2)

Prerequisite: MUSC 303 or permission of the instructor.

This is a course in the interpretation of musical notation and texts that date from the early medieval period. The class transcribes monophonic and polyphonic examples and interpret texts from manuscript facsimiles. Students learn about style and performance practices and acquire performance skills from their required participation in the Collegium Musicum (MUSC 109 ensemble). Students prepare selections for performance and assist in the Collegium Musicum's direction.

MUSC 590. Falk Seminar in Music Historical Research (3-3-0)

A proseminar in musicology that facilitates the scholarly preparation, writing and annotation of research findings through accurate and disciplined use of conventional style sheets. This course provides an excellent initiative for teacher training and recertification and an avenue into the field of Musicology.

SUBJ 595. Topics Courses

Departments in addition to the ones listed in this catalog may, from time to time, offer topics courses at the graduate level. Consult the *Schedule of Classes* booklet each semester for further information.

SUBJ 599. Independent Study

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 procedure for enrolling in Independent Study is stated on page 66 of this catalog.



Policies & Procedures

Admission to Graduate Studies

It is the policy of Christopher Newport University to admit graduate students whose ability and preparation indicate potential for success in the programs offered. Admission to graduate study is competitive and based upon a careful review of each applicant's academic and professional qualifications. Because CNU is an equal opportunity, coeducational University, admission is not based upon race, gender, color, age, religion, veteran status, national origin, disability, or political affiliation.

Graduate Academic Policies

Students are responsible for the proper completion of their academic programs. Students must be familiar with the information contained in the *CNU Graduate Catalog*, and must satisfy the requirements established by both the University and the specific master's degree program. The graduate program is administered by the Director of Graduate Studies, with instruction and research carried out by the graduate faculty. The Provost has final responsibility in all matters pertaining to instruction.

Tuition, Fees and Financial Aid

Tuition and fee rates are established each year by the Rector and Board of Visitors of Christopher Newport University. Financial aid consists of scholarships, grants, graduate assistantships, loans and employment opportunities that are available to help students finance their education. Most financial aid resources serve to supplement, rather than replace, the resources of family.

Family Rights and Privacy Act

The Family Educational Rights and Privacy Act of 1974 requires the University to maintain the confidentiality of student educational records and is intended to be a safeguard against unauthorized release of information contained in student educational records.

Board of Visitors, Administration and Graduate Faculty

The CNU Board of Visitors, administration personnel and graduate faculty members are listed. The graduate faculty exercises faculty jurisdiction over graduate courses and programs, requirements for admission to, continuation in, and graduation from all graduate programs.

ADMISSION TO GRADUATE STUDIES

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). The Office of Admissions collects the application materials and passes the documentation to the department(s) for a decision of admission. Applicants must read the information on the master's degree program to which they are applying for specific admission and academic requirements. Applications for admission are accepted on a rolling basis. Students may be admitted to the University for full or part-time study beginning the fall or spring semesters or prior to any summer session. Applicants are encouraged to apply well in advance of the term in which they wish to attend.

ADMISSION REQUIREMENTS

Application and Fees

Applicants must submit a completed **Application for Admission to Graduate Study**, and in order to determine eligibility for in-state tuition, a **Tuition Rate Determination Form**. There is an application fee of \$40.00. All of the graduate application forms are included in the back section of this catalog and are also available from the Office of Admissions, Administration Building Room 112.

College Records

Applicants must submit an official transcript of their baccalaureate degree from a regionally 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 and grades received. The applicant must also submit official transcripts for graduate work taken at other institutions.

Degree-seeking applicants must have minimum grade point average of 3.0 on a 4.0 scale.

Non-degree applicants must have a minimum grade point average of 3.0 on a 4.0 scale. Prospective students may submit official transcripts of undergraduate work taken at other institutions.

Educational and Professional References

Degree-seeking applicants must supply three letters of recommendations written by persons qualified to judge the applicant's potential to complete the graduate program successfully. All recommendations must arrive in unopened envelopes with the reference's signature across the envelope flap. Refer to the master's degree program section for any specific reference requirements.

Entrance Examinations

Examination scores are used as one of several indicators of the applicant's ability to succeed in graduate studies. The PRAXIS I and Graduate Record Examination are offered on an individually scheduled basis through Sylvan Technology Centers. Refer to the master's degree program section for specific examination requirements.

Application Deadlines

The application deadlines for degree-seeking students are: **July 1** for fall semester, **November 15** for spring semester, and **April 15** for summer sessions. After these deadlines, applicants may apply to enter as non-degree students. Application deadlines for international students are: June 1 for fall semester, October 15 for spring semester, and March 1 for summer sessions.

Reactivated Applications

Students who were accepted as degree-seeking but did not enroll may reactivate their applications within a period of two semesters of the original application. After that period of time, the complete set of application materials must be re-submitted along with a new application fee.

ADMISSION STATUS

DEGREE-SEEKING STATUS

Applicants approved to participate in a graduate program leading to a master's degree will be admitted as degree-seeking students. Students planning to use financial aid must be admitted under this status. A degree-seeking student will, upon acceptance, be assigned a graduate faculty advisor to assist the student in formulating an academic plan of study.

Admission Requirements for Degree-seeking Status

Submit completed application forms along with an official transcript indicating the successful completion of all requirements for a baccalaureate degree from a regionally accredited college or university. The applicant must have a minimum grade point average of 3.0 on a 4.0 scale. Official transcripts for other graduate work are required, as well as letters of recommendation and examination scores. Refer to the master's degree program section for specific or additional admission requirements.

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 Program Coordinator. 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 non-degree student may not enroll in more than 15 graduate credits in any one academic year.

Admission Requirements for Non-degree Status

Submit completed application forms and college records as outlined in the "Admission Requirements" section on the previous page. The non-degree applicant must have a minimum grade point average of 3.0 on a 4.0 scale. Letters of recommendation and examination scores are not required for the non-degree applicant.

Changing from Non-degree Status to Degree-seeking Status

A non-degree student must submit to the Office of Admissions the form **Request for Status Change to Degree-Seeking Status**, the fee of \$40.00, and all required documentation for degree-seeking status within a specific master's degree program in order to petition for the change in status. The amount of credit received as a non-degree student which is applicable toward a graduate degree will be determined by the Program Coordinator at the time the student changes to degree-seeking status.

Admission Requirements for Teachers Enrolling in a Non-degree Status

Any Virginia teacher who desires to enroll in a course for re-licensure or continued professional development may do so in a non-degree status and, as such, does not need to furnish an official baccalaureate transcript. A request to change to degree-seeking status, however, will require submitting the form **Request for Status Change to Degree-seeking Status**, the fee of \$40.00, and all required documentation for degree-seeking status in the Master of Arts in Teaching program.

CONDITIONAL STATUS

Provisional Admission

In exceptional cases, the appropriate academic department may grant provisional admission to a degree-seeking or non-degree applicant who does not have a complete application. Any deficiencies in the application, such as lack of scores for the Graduate Record Examination, must be provided by the Last Day to Withdraw Without Grade Penalty of that semester or summer session in which the applicant is enrolled. Students who do not submit these materials by the deadline will be automatically withdrawn from the course(s) in which they are enrolled.

INTERNATIONAL STUDENTS

Students from other countries with adequate preparation for graduate study are invited to apply for admission to Christopher Newport University. The University is authorized under federal law to enroll non-immigrant alien students. Application deadlines for international students are: June 1 for fall semester, October 15 for spring semester, and March 1 for summer sessions.

Admission Requirements for International Students

An international student must apply to enter the University as degree-seeking by submitting the specific master's degree program admissions documents. An international applicant who is not a U.S. citizen is required to:

1. Submit an Application for Admission to Graduate Study as a degree-seeking student.
2. Submit all documents required for degree-seeking admission to the specific master's degree program. Refer to the master's degree program section in this catalog.
3. Submit an official transcript translated into English of all courses in the baccalaureate degree and submit official transcripts translated into English of all graduate course work taken at other institutions.
4. Submit official transcripts translated into English to the World Education Services for a **course by course** evaluation and submit their transcript evaluation to the CNU Office of Admissions. See Evaluation of International Credits section for contact information.
5. Submit a minimum score of 213 on the computer-based Test of English as a Foreign Language (TOEFL) or an equivalent score of 550 on the paper-based TOEFL.
6. Complete a financial resource statement and provide an official bank affidavit guaranteeing that adequate funds are available for university study prior to coming to the United States.
7. Submit a graduate degree-seeking application fee of \$40.00.

*Since the University is a state-supported institution, it **cannot** provide financial aid to international students.

Evaluation of International Credits

International students must submit official transcripts translated into English to World Education Services (WES) to have their education credentials evaluated **course by course**. WES will prepare an objective, analytical report that describes the credentials and interprets them in terms of their U.S. equivalents. Visit the web site at <http://www.wes.org>, or contact WES at info@wes.org, or call **1-800-937-3895**.

CONTACT INFORMATION

Office of Admissions

The Office of Admissions is located in the Administration Building Room 112, and may be contacted at **1-800-333-4268**, **(757) 594-7015**, fax (757) 594-7333, or e-mail admit@cnu.edu.

An application may be submitted by mail to:
CNU Office of Admissions
One University Place
Newport News, VA 23606-2998

or submitted electronically from the CNU web site, www.cnu.edu.

GRADUATE ACADEMIC POLICIES

The academic policies stated hereafter apply to all students who register for graduate studies at Christopher Newport University.

REGISTRATION

A student must be registered as a graduate student in order to receive graduate credit. Upon receipt of notification of acceptance, the student will be allowed to register. All students registering must meet the minimum academic requirements for a specific program before taking a graduate course.

The University has established an early registration procedure for students already attending the University. This procedure is published prior to each semester in time for students to take advantage of this option. Students who early register for fall or spring classes must pay all tuition and fees or make other arrangements with the University Business Office by the deadline dates announced in the *Schedule of Classes*. Students are not considered to be officially registered until tuition and fee payments, or other arrangements, have been made with Business Office. Upon payment of tuition and fees, students need only to begin classes at the designated time.

Students registering during one of the early registration periods will receive a bill for tuition and fees through the mail. The bill must be paid by the deadline established for that session. If the bill is not paid or if other arrangements are not made with the Business Office by the established deadline, students must contact the Business Office to avoid being removed from registered courses. The University reserves the right to cancel students' registrations if their bills are not paid or other arrangements have not been made. If students have registered during an early registration period and have not paid their bills by the deadline, they should not attempt to re-register without contacting the Business Office to determine their status.

State Immunization Requirement for New Students

Section 23-7.5 of the Code of Virginia requires that all first-time, full-time undergraduate or graduate students born after 1956 have a Certificate of Immunization form completed by a licensed health professional and forwarded to the Office of Registrar no later than 10 days after the first day of classes of the first semester at CNU. Students who fail to present the completed Certificate of Immunization form will not be allowed to register or attend. The form is available from the Office of the Registrar.

Changes in Registration (Add/Drop)

After registering for classes, students must make any changes to their class schedule through the Office of the Registrar on the Schedule Change Form. Unless course changes are made in this manner, they will not be recognized by the University. Late registration and schedule changes are normally processed in the Office of the Registrar during the first five days of each semester (the schedule change period). Courses dropped during this period do not become part of the student's permanent academic record. Courses may not be added after this period without the approval of the Director of Graduate Studies.

Withdrawal from a Course

If serious and unforeseen circumstances arise, a graduate student may petition the course instructor to withdraw from a course in progress by completing a Withdrawal Form obtained in the Office of the Registrar. The course instructor will determine whether the request will be allowed. A student who withdraws from a course after receiving permission will receive the grade W. A student who withdraws from a course without receiving permission will receive a grade of F.

Withdrawal from the University

Withdrawal from the University means that the student ceases to attend all classes and is no longer enrolled in the University. Students desiring to withdraw from the University should do so by filing the withdrawal form or by written application to the Registrar. Unless withdrawals from the University are made in this manner they have no official standing and will not be recognized as valid by the University. Students may withdraw from the University prior to the final examination period.

Medical Withdrawal

Students who wish to withdraw from the University for medical reasons must have a letter sent to the Office of the Registrar by a physician certifying that the student is incapable of completing the academic work for medical reasons. Upon receipt of this letter all grades for the semester in question will be recorded as a W grade on the student's transcript.

Unofficial Withdrawal

Students who cease to attend classes and who do not complete a Withdrawal Form or notify the Registrar will receive a grade of F in each course taken.

Auditing a Course

Students may audit a course, with approval of their academic advisor, if class size permits. 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. At the completion of the audited course, auditing students' academic records will indicate AU for such courses rather than a letter grade.

Changes from audit to credit status and credit to audit status may be made only during the schedule change period. Out-of-state students must make financial arrangements with the Business Office before such a change is effective. If a student registers as an auditor but fails to comply with the instructor's attendance regulations, the instructor may direct that the notation W be posted to their permanent academic record rather than AU. Tuition and fees for auditing a course are the same as the tuition and fees for taking a course for credit.

Independent Study

The purpose of Independent Study (shown as SUBJ 599) is to enable qualified students to enrich their programs through directed reading or independent research under faculty supervision and for University credit. Goals, prerequisites, stages and grading procedures are agreed upon in writing by the student and the faculty member directing the Independent Study. This should be done by the end of the early registration period for the semester or session in which the Independent Study is to occur. 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.

An Independent Study Form, available in the Office of the Registrar, 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 Form must be submitted to the appropriate Program Coordinator. Students must then present the completed and approved Independent Study Form to the Office of the Registrar at the time of registration for the purpose of enrollment.

Examinations

The examinations given at the end of each semester take place at times announced on the examination schedule as listed in the *Schedule of Classes*. Students are required to take all announced final examinations at the times scheduled unless excused as noted in the "Absence From Examinations" section. The University does not authorize re-examination, nor will changes be permitted unless the student has examinations scheduled in four consecutive periods. If a student is forced by conflict to request a change, the request must be made to the Director of Graduate Studies through the Program Coordinator or instructor.

Absence from Examinations

Students may request to be excused from taking an examination at the scheduled time by presenting an acceptable reason for the expected absence to the instructor before the examination. An excuse on the grounds of illness will be accepted when it is verified by a physician and received by the Registrar. The instructor should be notified as soon as possible if illness or other emergency causes a student to be absent from an examination. If the instructor cannot be notified, the student must notify the Office of the Registrar (594-7155) as soon as possible.

ACADEMIC STANDARDS

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 is required for those taking a course at the 500 level. A student who has taken a course number 400/500 as a 400 level course may not retake it as a 500 level course. The three hyphenated numbers enclosed in parentheses following the title of the course, (4-3-2) 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.

Grading System

The following grades may be earned in graduate courses:

Letter Grade	Meaning	Numerical Value
A	Excellent	4.00
B	Good	3.00
C	Passing (Poor)	2.00
F	Failing	0.00
I	Incomplete	
W	Withdrew	
P	Pass (for EDUC 695,696, GOVT 691 and PSYC 691 only)	
S	Satisfactory (for thesis in progress)	
U	Unsatisfactory (for thesis in progress)	
AU	Audit	

Plus/Minus

The grades of A, B, and C may be awarded with the "minus" suffix which subtracts three-tenths of a grade point per credit hour. The grades of B and C may be awarded with a "plus" suffix which adds three-tenths of a grade point per credit hour.

Grade of Incomplete

A grade of incomplete (I) is given when some of the work required for a given course has not been completed because of some serious circumstance such as the student's illness. The uncompleted work must be completed before the incomplete grade can be changed. If the incomplete grade has not been changed after the first seven weeks of the next regular semester or if an appropriate extension has not been approved by the Director of Graduate Studies, the I grade will revert to a grade of F.

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 a S and/or U designation.

Overall Graduate Grade Point Average

A student's overall graduate grade point average (OGGPA) is computed by dividing the total number of grade points earned in graduate courses at Christopher Newport University by the total number of graduate credits attempted at the University. An overall graduate grade point average of at least 3.00 is required on all work credited toward a graduate degree. No more than six credits of C grades will be credited toward a graduate degree.

Grade Reports

Grade reports are sent at the end of the fall and spring semesters and in August for students who attend summer sessions.

Undergraduate Students Taking Graduate Courses

Graduating senior students may, under certain conditions, take graduate courses. Undergraduates seeking to enroll in a graduate course must have a grade point average of at least 3.0, and are limited to one graduate course (with any associated laboratory) per semester and to a total of two graduate courses (with any associated laboratory). Credit for such courses will not be applied toward an undergraduate degree but, upon graduation, will be transferred to the student's graduate record at the University, if they apply.

Approval to enroll in a graduate course must be obtained from the course instructor and the Program Coordinator before registering for a graduate course. Forms for this purpose are available from the Program Coordinators and from the Graduate Studies Office. The form must be attached to the Registration Form at the time of registration.

Graduate Students Taking Undergraduate Courses

A graduate student may enroll in a course that carries undergraduate credit if, in the 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.

Probation and Academic Suspension

If a degree-seeking student is not making satisfactory progress toward a graduate degree, that student may be suspended from the graduate program. Degree-seeking and non-degree students whose overall graduate grade point average falls below 3.0 or who earn a grade of C will be given a probation warning. Students who are on academic probation will be required to raise their grade point average above 3.0 or to earn at least a B in all graduate courses attempted in the next semester of enrollment. Degree-seeking and non-degree students who fail to raise their academic status in the next semester of enrollment will receive an academic suspension.

Degree-seeking students who earn an F grade in any graduate course, or who earn more than six semester hours of U or C grades in graduate courses will be suspended from the graduate program and not be permitted to register for additional graduate credits. Non-degree students who earn an F grade in any graduate course, or who earn more than six semester hours of U or C grades in graduate courses will not be permitted to register for additional graduate credits.

Appeal Processes

A student wishing to appeal the grade given in a graduate course must follow the Grade Challenge Procedures described in the *CNU Student Handbook*, with the additional stipulation that any faculty member participating in the process must be a member of the graduate faculty.

Academic Reinstatement Policy

All academic suspensions at the graduate level are made for an indefinite period of time. A suspended student must initiate an appeal for reinstatement by submitting a letter to the Director of Graduate Studies. This letter must include evidence supporting the appeal and demonstrating that the student is able to complete successfully the planned graduate program. Reinstatement of a student on academic suspension to graduate studies is a two step process.

Upon receipt of the letter initiating an appeal for reinstatement, the Director of Graduate Studies selects a committee of not fewer than three members of the graduate faculty drawn from the student's area of study or related areas. This committee will review the student's record and the evidence contained in the appeal letter and recommend accepting or rejecting the appeal. A recommendation to reinstate the student must be based on evidence strongly supporting the likelihood of the student's success in graduate school. This evidence may include: 1) statements from the student, 2) the student's credentials or, 3) an explanation of circumstances leading to the original suspension. This committee may also impose requirements that must be completed prior to reinstatement. These requirements may include a fixed period of suspension (not to exceed one year following the semester during which the academic suspension being appealed occurred) or the taking of specific undergraduate courses designed to strengthen the student's deficiencies. The undergraduate courses must be completed with the grade of A or B. While on academic suspension a student may not register for any class at the University.

The Director of Graduate Studies will render a final decision on the appeal based upon the committee's recommendation. A student whose appeal is rejected must wait at least one year to appeal again. A student whose appeal is accepted continues to the second step in the reinstatement process.

The second step in the reinstatement process consists of meeting all of the requirements imposed by the select committee. This same committee will review the student's progress and verify that the imposed requirements have been met completely. When they have been met, the Director of Graduate Studies will be notified and the reinstatement will be complete.

Upon reinstatement the student will be on probationary status. From this point on, all of the grades on the student's graduate record earned prior to suspension which are C, F or U will not be counted toward a master's degree. If a student who has been reinstated receives a grade of C, F or U in any graduate course, that student will be suspended.

DEGREE REQUIREMENTS

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

Credits

A minimum of 30 semester hour credits is required for a master's degree, however individual programs may require additional credits. At least 24 of these credits must be taken at Christopher Newport University. As many as six semester hours of graduate credit may be transferred from another college 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 overall graduate grade point average. If no thesis, portfolio, or culminating project is required as a part of the degree requirements, a minimum of 36 graduate credits will be required for the degree.

Transfer of Credit

As many as six semester hours of graduate credit from another regionally accredited institution may be included in a degree-seeking student's graduate record if the following conditions are met:

- A grade of A or B must have been earned;
- Courses taken with pass/fail or satisfactory/unsatisfactory grades are not acceptable for transfer credit;
- Courses submitted for transfer credit must have been applicable toward a similar degree at the institution awarding them;
- An official transcript showing the credits submitted for transfer;
- Evidence of their applicability toward a graduate degree must be forwarded to the Program Coordinator; and,
- Transfer credit must have been taken within six years prior to the award of the CNU master's degree.

The transfer of credit must be approved by the Program Coordinator. The request for transfer 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 already been used to fulfill the requirements of another earned degree.

Transfer Credit Earned while a Degree-seeking Student

A degree-seeking graduate student may take a graduate course at another regionally 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. Approval for such credit must be obtained from the Program Coordinator before registering at the other institution. Generally, permission to take a course elsewhere will not be given during the student's last semester at CNU.

Time Limit

Graduate students must complete all of their work toward a master's degree within a period of six calendar years. 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 petition for a waiver of this limit which must be approved by the student's advisor, Program Coordinator and the Director of Graduate Studies. Additional conditions, to verify the currency of knowledge involved in the courses for which the six-year limit might be waived, may be imposed.

Course of Study

A plan of study showing a reasonable concentration of interrelated subjects should be developed by each student in consultation with his or her advisor. This plan should be formulated and approved by the student's advisor before the student has completed 15 hours of graduate study. Any change in the student's plan of study must be approved by the student's advisor. In case of changes in program requirements subsequent to the year the student became degree-seeking, changes to the standard degree program must be approved by the degree's Program Coordinator and the Director of Graduate Studies.

Full-time Status

A student who enrolls in nine or more graduate credits in a given semester or six or more graduate credits in a summer session will be considered a full-time student. Students need approval of the Director of Graduate Studies in order to take more than nine credits in a given semester or more than six credits in a summer session. No student may enroll for more than 12 graduate credits in a given semester or more than nine graduate credits in a summer session under any circumstance.

Candidacy for the Master's Degree

A student must request candidacy for the master's degree prior to the semester in which he or she desires to receive the degree. To be eligible to petition for candidacy, a student must have achieved degree-seeking status, have completed 21 semester hours of graduate course work, and have at least a 3.00 graduate grade point average.

Comprehensive Examination

A comprehensive examination to evaluate the student's proficiency in his or her field may be required by a degree program for a master's degree. 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 which 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 after the failure of the original comprehensive examination.

Thesis

Research resulting in the presentation of a thesis may be required by the degree program. Students are required to be enrolled in at least one thesis credit hour 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. 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 Master's Theses at Christopher Newport University*. Theses may be placed in the CNU library as research sources available to the academic community.

Culminating Project - Master of Arts in Teaching - Mathematics or Science

The purpose of the culminating project is to engage the student in an intense practical experience with science or mathematics education. Students are expected to be enrolled in at least one 699 credit hour during any semester in which they are working on the project and must be enrolled in one 699 credit hour during the semester of degree completion.

Master Portfolio Project - Master of Arts in Teaching - Language Arts

The Master Portfolio Project is a culmination of the work done throughout the MAT Language Arts program. The individually designed portfolios connect program objectives to critical issues in language arts education. This is a cumulative and summative experience that requires synthesis and evaluation. The Portfolio Interview serves as the comprehensive final examination.

Practicum Portfolio - Master of Science in Applied Psychology - Industrial/ Organizational

The purpose of the practicum is to engage the student in an intense practical experience with an organization. Students are expected to be enrolled in at least one 691 credit hour during any semester in which they are working at the practicum and must be enrolled in one 691 credit hour during the semester of degree completion.

Intent to Graduate Form

Students must file the Intent to Graduate form, available from the Office of Graduate Studies, with the Office of Graduate Studies by January 1st preceding the graduation date for spring and summer degree completion, or August 1st preceding the graduation date for fall degree completion.

Commencement Exercises

Commencement exercises (graduation ceremonies) are held twice each year in May and December. Students who complete degree requirements in August and December will have degrees conferred in December, while those students who complete requirements in May will have degrees conferred in May. Diplomas will be mailed following the December ceremony, and available for pick-up following the May ceremony. All prospective graduates will be contacted by the Office of the Registrar concerning rehearsal and attendance before commencement exercises. Those students planning to attend Commencement must notify the Office of the Registrar by the announced deadline so that seating arrangements can be finalized for all who plan to participate. Prospective graduates will be advised when to order caps and gowns from the University Bookstore. Students who plan to attend commencement must keep the Office of the Registrar informed of any address changes so that they can receive important information concerning graduation. Students will not be permitted to participate in commencement ceremonies unless all requirements, including courses and credits, are completed prior to the ceremony.

GRADUATION REQUIREMENTS

- Successful completion of minimum hours of the master's degree program course work;
- An overall graduate grade point average of 3.00 in all CNU courses submitted for graduate credit with no more than two grades of C;
- Registration and timely petition for candidacy prior to the final semester;
- Successful completion of the comprehensive examination; and
- Successful defense of a culminating project, portfolio, or thesis and presentation of the appropriate number of approved copies to the Graduate Studies Office by the published deadline in the Academic Calendar.

TUITION AND FEES

The University reserves for itself the right to withdraw or change the fees announced in this catalog. Interpretation of matters concerning fees in this catalog is the responsibility of the Executive Vice President. The President of Christopher Newport University has final authority in the interpretation. Tuition and comprehensive fees are established each year by the Rector and Board of Visitors of Christopher Newport University.

FEES AND FINANCIAL INFORMATION

Academic Tuition

In-state students	\$150 per credit hour
Out-of-state students	\$392 per credit hour

Tuition payment is based on a charge for each credit hour of instruction. Registration is not complete until a student has either made payment or arranged to make payment with the Business Office. Tuition and fees for auditing a course are the same as the tuition and fees for taking a course for credit. Questions concerning payments and fees should be directed to the Office of Student Accounts, Room 210, Administration Building, (757) 594-7195 or (757) 594-7042.

General Fees*

Application - Graduate Degree-seeking	\$40.00
Registration Fee/Fall and Spring	\$20.00
Registration Fee/ Summer Terms	\$10.00
Academic Transcripts	No Charge
Returned Check Fee (per return)	\$25.00
Late Penalty and Administration Fee (per payment)	\$50.00
Reinstatement Fee (second week of classes)	\$100.00
(third week of classes)	\$200.00
Graduation Fee**	\$25.00
Parking Fee (per academic year)	\$100.00
Parking Fee (summer only)	\$50.00

* The fees listed above are not refundable.

**The graduation fee is exclusive of regalia which must be purchased at the University Bookstore.

Graduate Degree-seeking Application Fee

A student who wishes to be admitted as degree-seeking must pay a \$40 application fee. If the student does not enroll in the term for which he or she originally applied, the fee may be carried forward only to the next term. This fee does not need to be paid for non-degree admission.

Late Penalty and Administration Fee

The University charges a \$50 late payment fee on all amounts owed to the University which are not paid by the payment due date.

Schedule Changes (Add/Drop)

Any schedule change that results in additional funds due to the University is due and payable on the date the course is added. If the additional amount due is not paid on this date, a \$50 late payment fee applies. During the schedule change period (add/drop), the University is in the 75% refund period. If a student adds or drops courses for equal credit hours ON THE SAME DAY, there will be no financial penalty. However, if a student drops a course on one day and adds a course on another day, the student will be liable for 25% of the cost of the course dropped and will be charged full tuition and fees for the course added.

Students who are using the Academic Management Services (AMS) annual payment plan and who drop a course or courses may reduce their payment schedules through AMS. Students should contact AMS directly at (800) 635-0120 to take this action. Students may not increase their AMS payment plans for courses added during the schedule change period. Additional amounts due for courses added are payable to the University in full on the date the course is added.

Students who plan to or are receiving financial aid, course-load reductions and additions can affect the amount of financial aid awarded to them. This is particularly true if a course reduction results in a full-time student becoming a part-time student. 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 his or her academic workload, he or she should contact the Office of Financial Aid.

Residence Hall Financial Information

Cost per academic year for room and board is \$5,750. (Rates are subject to change each year based on the decision of the Board of Visitors.) To apply, submit the Academic Year Residence Hall Contract with a \$300 deposit to the Cashier's Office, Administration Building, or mail to Cashier's Office, Christopher Newport University, One University Place, Newport News, VA 23606-2998. Occupancy is on a first-come/first-serve basis. Room and Board fees must be paid in full prior to check-in. These fees are due by 5:00 p.m. on the payment due date (postmark date does not apply) unless other arrangements have been made (i.e. financial aid award, deferred payment plan, etc.) To obtain a Residence Hall Contract contact the University Housing Office, Christopher Newport University, One University Place, Newport News, VA 23606-2998 or call (757) 594-7756.

PAYING YOUR BILLS

Billing

Tuition bills will be mailed to students who register during early registration prior to the payment due date. Bills are mailed to the address provided to the Office of the Registrar. If the bill has not been received by the date published each term, it is the student's responsibility to contact the Office of Student Accounts to obtain copy of the bill. Failure to receive a bill does not waive the student from any financial penalties.

For those registering after early registration but prior to payment due date, bills will be handed out by the Office of Student Accounts at the time of registration, and these bills will be due by the payment due date established for each term. For those registering after the payment due date, bills are due in full at the time of registration.

Payments

Payment must be made at the Cashiers Office with cash, check payable to Christopher Newport University (CNU), money order, VISA or MasterCard. Payments by VISA or MasterCard may be made by mail or phone (594-7042). All payments, except cash, may be placed in the drop-box located outside the Office of Student Accounts, Administration Building, Room 210. Social Security Number or student ID number must be enclosed with payment. Students may also pay their tuition bills to the University through a deferred payment program offered by Academic Management Service (AMS) discussed later in the section.

TAKE CAREFUL NOTE OF THE FOLLOWING:

1. Students who owe the University any charges accrued from previous terms (i.e. tuition, parking fines, library fines, bookstore charges, etc.) are REQUIRED to pay these charges before being permitted to register.
2. 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.
3. Students who are receiving any form of financial aid MUST have their names on the award list submitted by the Financial Aid Office to the Office of Student Accounts, PRIOR TO PAYMENT DUE DATE. Deferments will be for only the amount of the award and students are REQUIRED to pay any balance by the PAYMENT DUE DATE. (This DOES NOT APPLY to loan programs where the check is not remitted directly to the University Financial Aid Office.) If the difference is not paid by the payment due date, a late payment fee will be assessed. STUDENTS WHOSE NAMES ARE ON THE AWARD LIST WILL NOT HAVE THEIR REGISTRATION CANCELED FOR NON-PAYMENT. If a financial aid recipient chooses to withdraw from classes, they must complete the appropriate forms with the University Registrar or they will be held liable for all classes for which they are registered. LATE FINANCIAL AID APPLICANTS MUST BE PREPARED

TO MEET THE TUITION OBLIGATION THROUGH MEANS OTHER THAN FINANCIAL AID BY THE PAYMENT DUE DATE.

4. The University may at its sole discretion cancel a student's registration for failure to meet financial obligations at any time.

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.

THE UNIVERSITY WILL CANCEL THE REGISTRATION FOR ALL STUDENTS WHO HAVE NOT MADE FINANCIAL ARRANGEMENTS ON THE PAYMENT DUE DATE.

Students whose registration is canceled at this time may register again during scheduled registration periods. The University does not guarantee that students will be able to obtain their original schedules. Classes are on a first-come/first-serve basis.

Reinstatement

The University will cancel the registration for all students who have not paid or made financial arrangements at the end of the add/drop period. Beginning on the Monday following the add/drop period, students whose registration was canceled on Friday may be reinstated provided they pay the full amount of their financial obligation. Students may be reinstated during the week following add/drop for a reinstatement fee of \$100.00 plus a \$50.00 late payment fee. Students may be reinstated during the second week following add/drop for a reinstatement fee of \$200.00 plus a \$50.00 late payment fee.

REINSTATEMENTS WILL NOT BE PROCESSED UNLESS THE STUDENT HAS PAID THE FULL FINANCIAL OBLIGATION. IF THE STUDENT PRESENTS THE UNIVERSITY WITH A CHECK THAT IS RETURNED FROM THE BANK FOR INSUFFICIENT FUNDS, THE STUDENT'S REGISTRATION WILL AUTOMATICALLY BE CANCELED; AND NO FURTHER OPPORTUNITIES FOR REINSTATEMENT WILL BE PERMITTED.

During the reinstatement period, students may not make any schedule changes. Students will be reinstated for the original schedule only. Reinstatements will only be permitted for two weeks following the week of add/drop. No reinstatements will be permitted after this date. REINSTATEMENT DOES NOT APPLY TO STUDENTS WHOSE REGISTRATION WAS CANCELED PRIOR TO ADD/DROP WEEK.

Academic Management Services (AMS) Tuition Payment Plan

This plan allows payment of ANNUAL tuition and fees in ten (10) equal monthly installments. Participation in the plan is on an ANNUAL basis, at an ANNUAL cost of \$50.00. When determining the amount to budget, please consider tuition and fees for FALL AND SPRING terms, and registration fees. This plan may be used by full-time or part-time students and MAY NOT BE USED FOR ONLY ONE TERM. Fall term tuition and fees must be paid in full by the 5th payment, which will be made on October 1st. If this payment does not pay Fall term charges, transcripts will be held and registration for the Spring term will not be permitted.

The University assesses a \$50.00 late payment fee for EACH PAYMENT that is made to AMS late. This fee is payable directly to the University. Information concerning this plan will be forwarded separately or may be obtained by calling Academic Management Services directly at (800) 635-0120. Students are encouraged to apply for the AMS 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 offered by the University through Academic Management Services. Students do not have to apply through the University's Office of Financial Aid to participate in the AMS tuition payment plan.

Refund Policy

If the University cancels a course for which a student has registered, the student is entitled to a full refund for that canceled course. Please note that refunds will not be received for any fee which is listed in this catalog or the *Schedule of Classes* as a non-refundable fee, unless the course is canceled by the University.

Federal financial aid recipients who totally withdraw from the University will have their refund processed in accordance with PUBLIC LAW 102-325, Section 484B and 34 CFR, 668, Appendix A. 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. All refund checks are processed through the State Treasurer and are mailed directly from Richmond to the student. Students should receive refunds within 45 days from the date the student officially makes the schedule change.

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.

Students must make application to the Office of the Registrar to drop a course on or before the deadline and during normal business days of the University in order to be eligible for a refund. Students who participate in the AMS 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. Please do not attempt to obtain a refund from AMS directly.

All refunds will be processed in accordance with the above policy. If there are extenuating circumstances (such as mandatory job transfer from the Hampton Roads area documented by a letter from the employer or extended period of hospitalization documented by a physician's statement), students should contact the Office of Student Accounts, Room 210, Administration Building, telephone (757) 594-7195 or 7060, to obtain an Appeal of University Refund Policy form. 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 this catalog. Failure to read and comply with University regulations will not exempt the student from financial penalties. All appeals must be filed by the end of the academic term to be considered. Any appeal filed after the term will be denied regardless of the circumstances.

Refund Schedule for Fall and Spring Semesters

Tuition and comprehensive fees will be refunded for fall and spring terms as follows: 100% for any course dropped on or before the last business day before the beginning of the academic term or for any course which is canceled by the University; 75% for any course dropped on the first day of the academic term through the end of the first week; 50% for any course dropped during the second, third and fourth week of the academic term, after which time there shall be no refund.

Refund Schedule for Summer Terms

For refund policies concerning Terms 2, 3, 4 and 5, please refer to the *Summer Schedule of Classes*.

Returned Checks

A RETURNED CHECK FEE OF \$25.00 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 the student does not repay the check and the fee before the payment due date, a \$50.00 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, his or her registration will be canceled. If a student who is being reinstated presents a check to the University that is returned by the bank for any reason, his or her registration will be canceled and he or she will not be permitted to return during that term. If the University receives TWO non-sufficient fund checks from a student, the University will no longer accept checks from the student.

Delinquent Financial Obligations

Students who have outstanding financial obligations to the University (to include tuition and fees, room and board, bookstore charges, parking fees and fines, library fees and fines, checks returned for non-sufficient funds, etc.) will be refused all services of the University until these financial obligations have been paid in full. Students will not be permitted to register for subsequent terms, grades will be held, and the University will not issue official transcripts, etc. 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 \$50 late payment penalty and administrative fee. The University may turn the account over to a third-party collection agency/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 reasonable administrative costs, collection fees, and attorney's fees incurred in the collection of funds owed to the University.

VETERANS BENEFITS

Students who are veterans, service members, or dependents using Veterans Administration education benefits must make financial arrangements at the time of registration. Students who are using Veterans Administration 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 V.A. benefits should contact the University's Office of Veterans' Affairs, telephone (757) 594-7175 or vetaffrs@cnu.edu.

SENIOR CITIZENS

The 1989 session of the Virginia General Assembly amended and re-enacted the Senior Citizen's Higher Education Act of 1974. Senior citizens are permitted to register and to 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 \$10,000 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 for any course for which such a fee is applicable. Senior citizens must meet the applicable University admissions requirements to participate in this waiver program, and the determination of 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 an eligible senior citizen who has completed 75 percent of the requirements toward 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, Room 210, Administration Building, and must be completed each academic term.

CLASSIFICATION AS AN IN-STATE STUDENT

Students and applicants for admission who claim entitlement to in-state educational privileges, including in-state tuition rates, must demonstrate their 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 Tuition Rate Determination Form and return it with their admission applications. Students who are already enrolled at CNU must apply for a change of status through the Office of Admissions by submitting the Tuition Rate Determination Form. Inquiries should be addressed to the CNU Office of Admissions, 1 University Place, Newport News, VA 23606-2998.

Procedure Upon receipt in the Office of Admissions, the Tuition Rates Determination 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 residence decision may request an immediate appeal, orally or in writing; but it must be done within ten 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, addressed to the Director of Admissions, within five working days of the first appeal decision. Another panel of University officials will then convene to consider the appeal. A written determination 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, he or she then has 30 days to take this matter to Circuit Court.

FINANCIAL AID

Entering students must be admitted to the University before receiving a decision letter regarding financial aid. Announcements of financial aid decisions for applicants filing on or before March 1 are normally made by April. Applicants for financial aid will be notified in writing by the Office of Financial Aid, and financial aid is awarded for one academic year only, but upon re-application and continued eligibility, may be renewed for succeeding years.

FINANCIAL AID PROGRAMS

The priority filing date for applying for financial aid administered by Christopher Newport University is March 1 for consideration in the following academic year. Later dates are established on an annual basis for the student loan programs.

Student Eligibility

A student must be (1) admitted as a degree-seeking graduate student, (2) enrolled on at least a half-time basis (however some programs may require full-time enrollment), (3) in good academic standing, (4) making satisfactory academic progress, and (4) a U.S. citizen or permanent resident.

Application Requirements

To be considered for financial aid, applicants must be enrolled or accepted for enrollment at the University as a degree-seeking student. Applicants must complete a 2002-2003 Free Application for Federal Student Aid (FAFSA) form (allow three to four weeks for processing). March 1 is a priority filing date but applications are accepted on a rolling basis. It is recommended that the student complete the FAFSA no later than February 1st to insure receipt of FAFSA results by the March 1st priority filing date. The Free Application for Federal Student Aid must be completed annually and is available from the Office of Financial Aid, Administration Building, Room 201.

Federal Work-Study Program

The Federal Work-Study Program provides jobs for undergraduate and graduate students with financial need, allowing them to earn money to assist in paying educational expenses. The salary is at least the current federal minimum wage.

FEDERAL STAFFORD STUDENT LOAN PROGRAM

Student Eligibility

A student must be admitted as a degree-seeking graduate student, and be enrolled on at least a half-time basis (5 credit hours for spring and fall semesters, 2 credit hours during the summer sessions).

Application Requirements

To be considered for the Federal Stafford Student Loan, applicants must complete a 2002-2003 Free Application for Federal Student Aid form. A separate loan application is not necessary if a lender is selected from the lender list that is provided with the CNU financial aid notification letter.

Financial Need or Non-Need Based Loans

Loans made under the Federal Stafford Student Loan Program are low-interest, long-term loans. This program is available to both the needy and the non-needy students.

Students **with financial need** can obtain what is called a subsidized FSSL. That means the U.S. Department of Education will pay the interest charges to the lender on the student's behalf as long as the student remains enrolled on at least a half-time basis and during the six to nine month period following enrollment (grace period). At the end of the grace period, repayment of the loan must begin and interest begins to accrue to the student borrower. Repayment may extend up to ten years but borrowers must make payments of at least \$50 per month.

Students who **do not qualify for the need-based** (subsidized) FSSL can obtain an unsubsidized, non-need-based loan. Unlike the subsidized FSSL, the student is responsible for the interest obligation while enrolled. The student, while enrolled on at least a half-time basis, may pay interest only or have the interest capitalized (added to the principal).

Graduate students may borrow up to \$18,500 per year of which up to \$8,500 may be subsidized loans. Remember financial aid is limited to the cost of education, so students at CNU would not be able to obtain the full program limit because it exceeds the cost of education.

Federal regulations require the lender to send the loan check, made co-payable to the school and the borrower, to the school for delivery to the student. The loan must be disbursed in two equal payments. If the loan is for the school year, the first disbursement will be made at the beginning of the fall semester and the second disbursement at the beginning of the second semester. If the loan is for only one semester, half the loan will be disbursed at the beginning of the semester and the remainder will be disbursed at the mid-point of the semester. This includes summer loans. The amount of the checks will be half the loan amount less an origination fee and guarantee fee.

SHORT-TERM EMERGENCY LOANS

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, interest free, sums (funds permitting) for a period not to exceed 30 days. Applicants should present a valid CNU student ID card when applying to the University's Office of Student Accounts.

Emergency Loan Fund

The 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 (funds permitting) for a period not to exceed 30 days. Applicants should present a valid CNU student ID card when applying to the University's Office of Student Accounts. Emergency loans are limited to \$75 per student, and students may receive no more than two emergency loans per academic term.

GRADUATE ASSISTANTSHIPS

Terms

Length of time a graduate student may receive an assistantship is a combination of four semesters and two summers in a two year period. Types of assistantship activities: teaching and/or related activities, research and/or related activities, or administration (e.g., of tutorial programs). Additional employment cannot exceed 10 hours per week (1/4 time) without prior approval of the Director of Graduate Studies. If the assistantship requires 20 hours per week (1/2 time) then there can be no outside employment without prior approval of the Director of Graduate Studies.

Criteria

Be enrolled as a full graduate degree-seeking student taking a minimum of six and a maximum of nine credit hours in the semester of the award. Submit a program graduate assistantship application along with the following: scores from the standardized test required for program admission, graduate grade point average, undergraduate grade point average, two letters of reference, and an essay explaining how the award will further career goals.

Application Procedures

For a graduate assistantship application contact the Office of Graduate Studies or the Program Coordinator. Submit applications directly to the Program Coordinators.

ADDITIONAL INFORMATION

Estimated Costs

Budget planning for attendance at CNU should consider both direct charges which are tuition and fees, and indirect costs which are normal living expenses.

Contact Information

Students interested in receiving financial aid are strongly encouraged to view the CNU website at <http://www.cnu.edu/admin/finaid/>. Financial aid applications and additional information are available from the Office of Financial Aid, Administration Building, Room 201, (757) 594-7170.

FAMILY RIGHTS AND PRIVACY ACT

Listed below is the notification of the Family Rights and Privacy Act of 1974. The University is to inform enrolled students annually of their rights under the terms of the Family Educational Rights and Privacy Act of 1974, submitted by the Registrar. The act does not apply to students admitted to the University who have not officially enrolled. Enrolled students have the following rights under the Law:

STUDENT RECORDS

A. Policy Intent

1. The University student 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 that student information that is maintained and yet provide access to student records for those having a legitimate purpose to view such records. Regulations and procedures to ensure adequate protection of the student are provided in this policy.
3. "Records" 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 them. Access to records by others, without student permission, is limited to purposes of an educational nature. When access is permitted, documents will be examined only under conditions that will prevent unauthorized removal, alteration, or mutilation. Information to which the student does not have access is limited to the following:
 - a) Confidential letters of recommendation placed in the student's files before January 1, 1975, and those letters for which student has signed a waiver of his or her right of access.
 - 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 and which are not accessible or revealed to any person except a substitute."
 - d) Records of the Admissions Office concerning students admitted but not yet enrolled at the University. Letters of recommendation are removed from the Admissions files before the files are forwarded to the Registrar's Office.
 - e) Medical/psychological records used in connection with treatment of the student. Such records are however, reviewable by a physician or psychologist of the student's choice.
 - f) University Police Department records, when utilized for internal purposes by those offices in their official capacities.
4. Only the following offices are authorized to release non-directory information: President, Provost, Dean of Students, Registrar, Career and Counseling Services and Financial Aid.
5. Copies of this policy are available upon request from the Registrar, who is responsible for the administration of the student record policy.

B. Access to Student Records by the Student

1. Students have the right to inspect their records (as defined in A.3 above) and are entitled to an explanation of any information therein.
2. 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. Such records should be requested by the student from the originating institution.
3. Official records and transcripts of the University (signature and/or seal affixed) are mailed directly to other institutions or agencies at the student's request. When extreme circumstances warrant, official records may be given directly to the student at the discretion of the proper University official. In such cases, the record will be clearly marked to indicate issuance to the student.
4. Should a student believe his or her record is incorrect, a written request should be submitted to the appropriate University official indicating the correct information that should be entered. The official will respond within a reasonable period concerning his or her action. Should the student not be satisfied, a hearing may be requested of the Registrar.

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 officials. Such information is limited to the following:
 - a) Student's name, address, telephone number (permanent and local).
 - b) Date and place of birth.
 - c) Dates of attendance at the University, field of concentration, current classification, degrees, honors and awards.
 - d) Previous schools attended and degrees awarded.
 - 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 Registrar's office. 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) Access to student records for administrative reasons for faculty, administrative staff, and other pertinent employees is permissible provided that such persons are properly identified and can demonstrate a legitimate interest in the materials.
 - b) Access for the purpose of research by faculty, administrative staff, and graduate students is permissible when authorized by the department head and the administrator of the office concerned.
 - c) Information requested by student organizations of any kind will be provided only when authorized by the Dean of Students.
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. Otherwise, the academic transcript will be sent only to the student, a policy is consistent with the University's interpretation of the Family Education Rights and Privacy Act of 1974, popularly known as the "Buckley Amendment."
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.

Board of Visitors

Rector
Robert L. Freeman, Jr.
 Newport News, Virginia
Term Expires 6/30/03

Vice Rector
H. W. Trieshmann, Jr., M.D.
 Newport News, Virginia
Term Expires 6/30/04

Secretary
Pamela Clark
 Poquoson, Virginia
Term Expires 6/30/02

Sandra L. Combs
 Yorktown, Virginia
Term Expires 6/30/01

William M. Grace
 Newport News, Virginia
Term Expires 6/30/02

Myrl L. Hairfield
 Williamsburg, Virginia
Term Expires 6/30/02

William P. Heath, Jr.
 Williamsburg, Virginia
Term Expires 6/30/02

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 Newport News, Virginia
Term Expires 6/30/02

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 McLean, Virginia
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Term Expires 6/30/04

James O. West
 Williamsburg, Virginia
Term Expires 6/30/01

Harold L. Williams, M.D.
 Newport News, Virginia
Term Expires 6/30/02

University Administration

Paul S. Triple, Jr.
President

Douglas C. Gallae
Associate Vice President of Human Resources

Douglas K. Gordan, Ph.D.
Associate Dean of the College of Liberal Arts and Sciences

Cynthia K. Knupp
Director of President's Leadership Program

Lucy L. Latchum
Director of Special Events

M. Paige Maddox
Director of University Bookstore

Patricia L. McDermott
Director of Planning and Budget

Robert L. Midgette, Jr.
Director of Internal Audit

Michelle L. Moody
Director of EEO and Faculty Recruitment

Donna T. Mottilla, D.B.A.
Dean of the School of Business

Maurice J. O'Connell
Dean of Students

Steven D. Pappas
Director of Auxiliary Services

Anne W. Perkins
Associate Provost

Cynthia R. Perry
Chief of Staff

Michael L. Russell
Director of the Computer Center

Lennie I. Alger
Director of Plant Operations

Marcia D. Boyd
Director of Financial Aid

William L. Brauer
Executive Vice President

Jeffrey S. Brown
Chief of University Police

Norma J. Brown
Director of Gift Planning

Patricia P. Cavendar
Director of Admissions

Denise Crittenden
Director of Material Management

Lisa D. Curry
Director for the Center for Community Learning

Evan S. Davies
Director of Institutional Research

Robert D. Doane
Provost

Dorothy C. Doolittle, Ph.D.
Associate Dean of the College of Liberal Arts and Sciences and Director of Graduate Studies

Catherine F. Doyle
University Librarian

Donna M. Eddleman
Associate Dean of Students

Carol A. Safko
Director of Academic Advising

Jack H. Sims
Vice President for University Advancement

Gerald D. Smith
Director of University Services

Richard M. Summerville, Ph.D.
Dean of the College of Liberal Arts and Sciences

Anita Tieman, Ed.D.
Director of Career and Counseling Services

William E. Thro
General Council

Maribeth Trun
Associate Vice President for Finance and Comptroller

Donna A. Varner
Registrar

George R. Webb, Ph.D.
Special Assistant to the President for Technology

Noel C. Womack, Ph.D.
Director of Assessment

C. J. Woolum
Director of Athletics

Margaret O. Yancey
Director of Development

Amy R. Yaeckel
Director of the Annual Fund

Christopher Newport University Graduate Faculty

This list reflects the expected status of members of the graduate faculty for 2001-2002 at the time the catalog went to press.

Ex officio Members

Paul S. Triple, Jr.
President of the University
 B.A., Hampden-Sydney College;
 J.D., Washington and Lee University

Robert D. Doane
Provost of the University and Professor of Government and Public Affairs
 B.A., Lynchburg College; M.A., George Washington University; Ph.D., Temple University

Anne W. Perkins
Associate Provost of the University
 B.A., M.A., University of Richmond; Ed.D. College of William and Mary

Richard M. Summerville
Dean of the College of Liberal Arts and Sciences and Professor of Mathematics
 B.S. Clarion State University; A.M. Washington University, St. Louis; Ph.D., Syracuse University

Dorothy C. Doolittle
Associate Dean of the College of Liberal Arts and Sciences, Director of Graduate Studies, and Professor of Psychology
 B.A., University of Georgia; M.S., Ph.D., University of Tennessee, Knoxville

Douglas K. Gordon
Associate Dean of the College of Liberal Arts and Sciences and Professor of English
 B.A., University of Virginia; M.A., Ph.D., University of Tennessee at Knoxville

Donna T. Mottilla
Dean of the School of Business and Professor of Management and Marketing
 B.A., M.S., M.B.A., Shippensburg State University; D.B.A., Kent State University

Catherine Doyle
University Librarian and Associate Professor of Library Science
 B.A. Rutgers University, M.S.L.S., Simmons College

George R. Webb
Special Assistant to the President for Technology and Professor of Physics and Computer Science
 A.A., Old Dominion University; B.S., Massachusetts Institute of Technology; Ph.D., Virginia Polytechnic Institute and State University

Education

Jane M. Bailey
Associate Professor of Education
 B.A., State University of New York College at Oneonta;
 M.A., San Diego State University;
 Ed.D., The College of William and Mary

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 M.S., M.A., Ph.D., University of Oregon

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Rebecca S. Wheeler

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Fine and Performing Arts

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 M.A., Ph.D., Columbia University

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Harry Greenlee

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Ph.D. University of Illinois

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Polytechnic Institute and State University

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M.A., Ph.D., University of Arkansas

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Timothy R. Marshall

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Assistant Professor of Chemistry
B.S.c, M.Sc. Alexandria University; Ph.D. Northeastern University

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Ph.D., Virginia Polytechnic Institute and State University

Russell A. Benedict

Assistant Professor of Biology
B.A., M.S. University of Nebraska at Omaha; Ph.D. University of Nebraska at Lincoln

Harold N. Cones, Jr.

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Mark S. Gray

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James R. Reed, Jr.

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Ph.D., Tulane University

Barbara A. Savitzky

Associate Professor of Biology
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Gary J. Whiting

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Mathematics**John J. Avioli**

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Martin W. Bartelt

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B.S., Hunan Normal University, PRC; M.S., Huazhong University of Science and Technology, PRC; Ph.D., North Carolina State University

Parviz Khajeh-Khalili

Professor of Mathematics
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Ming Zhang

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Economics and Finance**H. Marshall Booker**

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Michelle A. Yachris

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Robert C. Winder

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Ph.D., Rutgers University

George Zestos

Associate Professor of Economics
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Management and Marketing**Hank B. Karp**

Assistant Professor of Management
B.A., University of Delaware; M.A., Ph.D. Case Western Reserve University

Walter W. Wymer, Jr.

Assistant Professor of Management and Marketing
B.S., St. Joseph College; M.B.A., Liberty University; D.B.A., Indiana University



Designed by the world famous architectural firm of Pei, Cobb, Freed and Partners, CNU's Center for the Arts will be one of the nation's premiere cultural centers.

Application Forms

Application for Admission to Graduate Study Master's Degree Programs

Master of Arts in Teaching

History (K-12)
Language Arts (K-12)
Mathematics (5-12)
Science (K-12)

Master of Arts in Teaching with Licensure

Elementary Education (NK-5)
Middle Level Education with a Concentration in English (5-8)
Secondary Education, English (9-12)

Master of Science in Applied Physics and Computer Science

Computer Science
Computer Systems Engineering and Instrumentation
Applied Physics

Master of Science in Applied Psychology

Industrial/Organizational Psychology

Master of Science in Environmental Science

Master of Public Safety Leadership

- Checklist for Application to CNU Graduate Study -

All applicants must provide the following:

- ☐ Application for Admission to Graduate Study
- ☐ Tuition Rate Determination Form, if seeking entitlement to in-state educational privileges

Non-degree Applicants (See exception for Teachers below)

- ☐ Official Transcript(s) from the institution awarding the baccalaureate degree
- ☐ Official Transcript(s) from all graduate work taken at other institutions

Non-degree Applicants who are Teachers in the Commonwealth of Virginia

Official Transcript(s) not required

Master of Arts in Teaching degree-seeking applicants must provide:

- ☐ Official Transcript(s) from the institution awarding the baccalaureate degree
- ☐ Official Transcript(s) from all graduate work taken at other institutions
- ☐ Three (3) Letters of Recommendation. 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
- ☐ For the MAT-Licensure program submit scores from the PRAXIS I, and a one page typed essay describing the applicant's purpose for entering the teaching profession
- ☐ For the MAT program for those holding licensure, submit scores from the specialty area test of the PRAXIS series

M.S. in Applied Physics and Computer Science degree-seeking applicants must provide:

- ☐ Official Transcript(s) from the institution awarding the baccalaureate degree
- ☐ Official Transcript(s) from all graduate work taken at other institutions
- ☐ Three (3) Letters of Recommendation
- ☐ GRE Scores from the General Test (taken within 5 years prior to the date of admission)

M.S. in Applied (I/O) Psychology degree-seeking applicants must provide:

- ☐ Official Transcript(s) from the institution awarding the baccalaureate degree
- ☐ Official Transcript(s) from all graduate work taken at other institutions
- ☐ Three (3) Letters of Recommendation
- ☐ GRE Scores from the General Test (taken within 5 years prior to the date of admission) with combined scores of 950 or higher on the quantitative and verbal sections
- ☐ Written Essay not to exceed two double-spaced typewritten pages in length, describing the applicant's interest in Industrial/Organizational Psychology. Include a discussion of specific topic areas, research interests, and/or applications that are of interest. Describe the ways in which this degree fits into personal career objectives

M.S. in Environmental Science degree-seeking applicants must provide:

- ☐ Official Transcript(s) from the institution awarding the baccalaureate degree
- ☐ Official Transcript(s) from all graduate work taken at other institutions
- ☐ Three (3) Letters of Recommendation
- ☐ GRE Scores from the General Test (taken within 5 years prior to the date of admission)

Master of Public Safety Leadership degree-seeking applicants must provide:

- ☐ Official Transcript(s) from the institution awarding the baccalaureate degree
- ☐ Official Transcript(s) from all graduate work taken at other institutions
- ☐ Three (3) Letters of Recommendation
- ☐ GRE Scores from the General Test (taken within 5 years prior to the date of admission)

All information should be sent to:

Office of Admissions, Christopher Newport University, One University Place, Newport News, VA 23606-2998



**APPLICATION FOR ADMISSION
TO GRADUATE STUDY**

Personal Information

Name of Applicant _____
Last name First name Middle/Former name

Social Security Number _____ (Circle one) Mr. Mrs. Ms.

Home Address _____
Street Address/P.O. Box # City State Zip Code

Mailing Address _____
Street Address/P.O. Box # City State Zip Code
Mailing Address Until What Date _____

Daytime telephone number _____ Evening telephone number: _____

E-mail Address _____ Date of Birth: _____ Male ___ Female ___

Check ethnic designation (for federal reporting purposes):

American Indian or Alaskan Native ___ Black, Non-Hispanic ___ White, Non-Hispanic ___
Asian or Pacific Islander ___ Hispanic ___

Application Information

Application for: Fall ___ Spring ___ Summer ___ Year _____

Application Status: Degree-seeking ___ Non-degree ___ Full-time ___ Part-time ___

Application Type: Initial Admission ___
Re-Admission ___ When did you last attend CNU as a graduate student? _____
Re-Open ___ List the semester/year you were admitted to graduate studies but withdrew or did not attend _____

Degree Program: ___ **M.A.T.** History ___ Mathematics ___ Science ___ Language Arts ___
Language Arts with Licensure ___ Mathematics with Licensure ___
___ **M.S. in Applied Physics and Computer Science** Applied Physics ___ Computer Science ___
Computer Systems Engineering and Instrumentation ___
___ **M.S. in Applied (Industrial/Organizational) Psychology**
___ **M.S. in Environmental Science**
___ **Master of Public Safety Leadership**
___ **5 Year Master of Public Safety Leadership**
___ **5 Year B.A./M.A.T.** Mathematics ___ Science ___ Language Arts ___

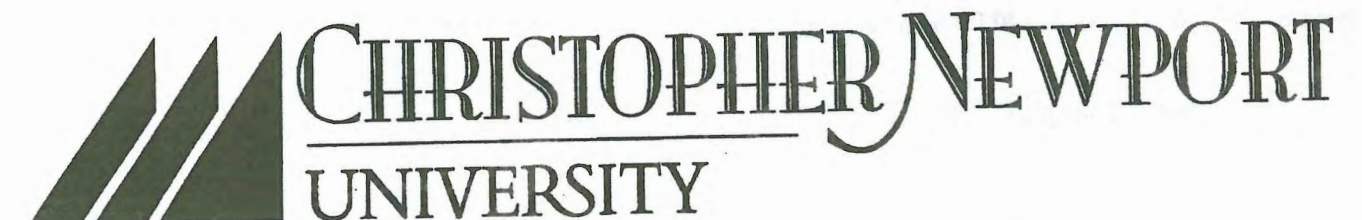
Domicile Information

Citizenship: U.S. Citizen ___ Resident alien ___ Non-resident alien ___

If a non-resident alien, list country, visa type and visa number _____

Your legal state of residence (For military personnel, your legal home of record) _____

To determine eligibility for in-state tuition complete Tuition Rate Determination Form.



Professional Information

Your Current Employer _____
Name City State
Dates of Employment _____

Are you certified by the Commonwealth of Virginia to teach in Virginia? Yes ____ No ____
In what area? _____
Current Teaching Position, indicate school district, grade, and subject area _____

Academic Information

List the institution awarding your baccalaureate degree and list all other colleges and universities attended for graduate study. Indicate the undergraduate institution by U and graduate by G.

Name of College	Location City/State	Undergraduate (U) Graduate (G)	Dates of Attendance	Credits Earned	Degree Earned	Date of Graduation

Are you in good academic standing (eligible to return) at your most recently attended college? Yes ____ No ____

Have you ever been suspended, dropped for academic deficiencies, administratively withdrawn for academic reasons, or declared academically ineligible to attend any college? If yes, attach letter with all details. Yes ____ No ____

Testing Information

Indicate the test by listing the date you took the test or date you plan to take the test:

Test	Test Taken (Month/Year)	Plan to take Test (Month/Year)
Graduate Record Examination (GRE)		
PRAXIS I		
Teachers' Specialty Test		
Test of English as a Foreign Language (TOEFL)		

I certify that the information contained herein is true and correct. I agree to abide by the rules, regulations and Honor Code of Christopher Newport University, should I be offered admission. I also understand that any information supplied in support of this application will be treated as confidential by the University and will not be divulged to any other party, except as permitted by law.

Signature of Applicant _____ Month/Date/Year _____
Degree-seeking students—complete the Graduate Application Fee Form below but do not remove.

GRADUATE APPLICATION FEE FORM

Name of Applicant (Last name, first name, middle initial) _____ Social Security Number _____
Application for: Fall ____ Spring ____ Summer ____ Year ____ Daytime Telephone Number _____
Payment of the non-refundable \$40.00 Degree-seeking fee: Check ____ Money Order ____ Credit Card ____
Account Number (please print) _____ VISA or MasterCard (Please circle one) _____ Card Expiration Date _____
Cardholder name (please print) _____ Cardholder signature _____



This form must be completed to determine eligibility for in-state tuition pursuant to section 23.7.4 Code of Virginia. All applicable questions must be answered. Please submit this form with your graduate application.

SECTION A: APPLICANT

Term: Fall ____ Spring ____ Summer ____ Year ____
1. Name of Applicant: _____
2. Social Security Number: _____
3. Date of Birth: _____
4. Citizenship: U.S. ____ Non-U.S. ____
If non-U.S., give visa type _____
5. How long have you lived in Virginia? _____
6. Where have you lived the last two years? List current address first:
From (mo/yr) To (mo/yr) Street Address City State Zip _____
7. Do you wish to claim in-state tuition rates based on Virginia domiciliary status? Yes ____ No ____
If yes, continue to SECTION B. If no, skip to SECTION E.

SECTION B: STUDENT STATUS

1. Will you be age 24 before the first day of classes? Yes ____ No ____
2. Are you a veteran of the U.S. Armed Forces? Yes ____ No ____
3. Are you on active duty with the military? Yes ____ No ____
4. Will you be enrolled in a graduate or professional program (beyond a Bachelor's degree)? Yes ____ No ____
5. Are you married? Yes ____ No ____
6. Are you an orphan or a ward of the court, or were you a ward of the court until age 18? Yes ____ No ____
7. Do you have legal dependents (other than spouse)? Yes ____ No ____
*If you answered yes to any question, please complete SECTION C.
If you answered no to every question, please sign SECTION E and have your parents or legal guardians complete SECTIONS D & E.*

SECTION C: DOMICILE

1. Will you have filed a tax return and paid income taxes to Virginia during the past twelve months? Yes ____ No ____
2. For the entire twelve months prior to the term in which you will enroll, will you have been a registered voter? Yes ____ No ____
Registration Date: ____/____/____
3. For the entire twelve months prior to the term in which you will enroll, will you have a valid Virginia Driver's License? Yes ____ No ____
Date Issued: ____/____/____
4. Do you own or operate a motor vehicle? Yes ____ No ____
If yes, was it registered in the state of Virginia? Yes ____ No ____
5. Are you or any member of your immediate family presently in the military? Yes ____ No ____
If no, please skip to question 6. If yes, please check:
Self ____ Spouse ____
a. Will Virginia income taxes have been paid on all military income for one year prior to the term in which you enroll? Yes ____ No ____
b. If your spouse is in the military, will you have resided in Virginia, earned \$10,300.00 and paid income taxes to Virginia for at least one year prior to the term in which you will enroll? Yes ____ No ____
If yes, please attach Virginia tax forms.
c. Did your spouse provide over half of your financial support? Yes ____ No ____
6. Answer this question only if you have worked in Virginia but lived outside Virginia during the past 12 months. Did you file Virginia taxes on all taxable income earned in Virginia for the last tax year? Yes ____ No ____
Please skip to SECTION E.

Office use only:
Processed: _____ Date _____ I ____ O ____

TUITION RATE DETERMINATION FORM

SECTION D: PARENT OR LEGAL GUARDIAN

1. Name of Parent/Legal Guardian: _____
2. Relationship to applicant: _____
3. Citizenship: U.S. ____ Non-U.S. ____
If non-U.S., give visa type _____
4. How long have you lived in Virginia? _____
5. Where have you lived the last two years? List current address first:
From (mo/yr) To (mo/yr) Street Address City State Zip _____
6. Will you have filed a tax return and paid income taxes to Virginia during the past twelve months? Yes ____ No ____
7. Will you have claimed the applicant as a dependent on your federal and Virginia income tax returns for the twelve months prior to the term in which the applicant will enroll? Yes ____ No ____
8. Will you have provided over half of the applicant's financial support for the entire twelve months prior to the term in which the applicant will enroll? Yes ____ No ____
9. For the entire twelve months prior to the term in which the applicant will enroll, will you have:
a. been a register voter in Virginia? Yes ____ No ____
Registration Date: ____/____/____
b. held a valid Virginia Driver's License? Yes ____ No ____
Date Issued: ____/____/____
10. Do you own or operate a motor vehicle? Yes ____ No ____
If yes, was it registered in the state of Virginia? Yes ____ No ____
11. Are you or any member of your immediate family presently in the military? Yes ____ No ____
If no, please skip to question 12. If yes, please check:
Self ____ Spouse ____
a. Will Virginia income taxes have been paid on all military income for one year prior to the term in which the applicant will enroll? Yes ____ No ____
b. If your spouse is in the military, will you have resided in Virginia, earned \$10,300.00 at least and paid income taxes to Virginia for at least one year prior to the term in which the applicant will enroll? Yes ____ No ____
12. Answer this question only if you and your spouse have lived outside Virginia but work inside Virginia. Yes ____ No ____
a. Will you or your spouse have lived outside Virginia, earned \$10,300.00 at least and paid income taxes to Virginia for at least one year prior to the term in which the applicant will enroll? Yes ____ No ____
b. If the answer to (a) is yes, will the parent employed in Virginia have claimed the applicant as a dependent for federal and Virginia income tax purposes for at least one year prior to the term in which the applicant will enroll? Yes ____ No ____
Please complete SECTION E.

SECTION E: SIGNATURES

The applicant must sign below or this application will not be processed. If SECTION D has been completed by a parent or legal guardian that person's signature must also appear below.

I certify under penalty of disciplinary action that the information I have provided is true.

SIGNATURE OF APPLICANT _____ DATE _____

I certify that the information I have provided is true.

SIGNATURE OF PARENT OF LEGAL GUARDIAN _____ DATE _____

**LETTER OF RECOMMENDATION
FOR GRADUATE STUDY**

SECTION I (to be completed by applicant)

The following information must correspond to the information submitted on the Application for Admission to Graduate Study. Indicate your decision regarding a waiver of the right of access to this letter of recommendation before giving it to the person who will be submitting the recommendation. Give this form, along with a self-addressed and stamped envelope, to your reference. Have that person place the completed recommendation into the envelope, seal it, and sign across the seal. The envelope should be returned to you, and you should return it with your application. Do not return separately. Advise your reference if the letter is also to be used as a recommendation for financial assistance.

Name _____
Last Name First Name Middle/Former

Social Security Number _____

Degree Program _____ Term and Year of Entry _____

Name of Reference: _____

The Family Education Rights and Privacy Act of 1974 and its amendments guarantee students access to their educational records. Student, however, are entitled to waive their right of access concerning recommendations. The following signed statement is the applicant's wish regarding this recommendation.

_____ I waive my right to inspect the contents
of this recommendation.

_____ I do not waive my right to inspect the contents
of this recommendation.

Signature _____ Date _____

Signature _____ Date _____

SECTION 2 (to be completed by reference)

Christopher Newport University values your comments on the suitability of this applicant to do graduate work and will hold your comments in confidence if the applicant has signed the above waiver.

How long and in what capacity have you known the applicant? _____

Please carefully assess the applicant in the following areas. In making the assessment, compare the applicant to other individuals you have known who have similar levels of experience and education.

	Superior	Good	Average	Poor	Unknown
Intellectual ability	_____	_____	_____	_____	_____
Ability to analyze a problem and formulate a solution	_____	_____	_____	_____	_____
Competence in applicant's general field	_____	_____	_____	_____	_____
Self-reliance	_____	_____	_____	_____	_____
Leadership	_____	_____	_____	_____	_____
Creativity/innovation	_____	_____	_____	_____	_____
Motivation	_____	_____	_____	_____	_____
Self-discipline	_____	_____	_____	_____	_____
Cooperativeness	_____	_____	_____	_____	_____
Oral communication skills	_____	_____	_____	_____	_____
Written communication skills	_____	_____	_____	_____	_____
Initiative	_____	_____	_____	_____	_____
Reliability	_____	_____	_____	_____	_____

Please use the space on the other side of this application to elaborate on the applicant's qualifications.

RECOMMENDATION

CNU is interested in obtaining an accurate profile of the applicant's capability for graduate study. The check-off items appearing on the previous page sometimes do not provide the opportunity to characterize an applicant fully. Please give any additional comments in the space below. CNU would especially appreciate comments on the applicant's intellectual capability, motivation for seeking graduate education and prospects for completing graduate education (e.g. perseverance, work habits, organization). This form may also be used as a recommendation for financial assistance, such as teaching or research assistant or fellowships.

Your overall assessment of the applicant as to his or her ability to complete an advanced academic degree:

☐ Highly recommended ☐ Recommend with reservation

☐ Recommend ☐ Not recommended

Signature _____ Date _____

Please print name _____

Institution _____

Position _____ Telephone number/e-mail address _____

Please place the completed form in the addressed and stamped envelope provided by the applicant. Please be sure to seal the envelope and sign it across the seal before returning it to the applicant.

Thank you for assisting Christopher Newport University with its graduate application process.



LETTER OF RECOMMENDATION FOR GRADUATE STUDY

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Name _____
Last Name First Name Middle/Former

Social Security Number _____ - _____ - _____

Degree Program _____ Term and Year of Entry _____

Name of Reference: _____

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☐ I waive my right to inspect the contents
of this recommendation.

☐ I do not waive my right to inspect the contents
of this recommendation.

Signature _____ Date _____

Signature _____ Date _____

SECTION 2 (to be completed by reference)

Christopher Newport University values your comments on the suitability of this applicant to do graduate work and will hold your comments in confidence if the applicant has signed the above waiver.

How long and in what capacity have you known the applicant? _____

Please carefully assess the applicant in the following areas. In making the assessment, compare the applicant to other individuals you have known who have similar levels of experience and education.

	Superior	Good	Average	Poor	Unknown
Intellectual ability	—	—	—	—	—
Ability to analyze a problem and formulate a solution	—	—	—	—	—
Competence in applicant's general field	—	—	—	—	—
Self-reliance	—	—	—	—	—
Leadership	—	—	—	—	—
Creativity/innovation	—	—	—	—	—
Motivation	—	—	—	—	—
Self-discipline	—	—	—	—	—
Cooperativeness	—	—	—	—	—
Oral communication skills	—	—	—	—	—
Written communication skills	—	—	—	—	—
Initiative	—	—	—	—	—
Reliability	—	—	—	—	—

Please use the space on the other side of this application to elaborate on the applicant's qualifications.

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Your overall assessment of the applicant as to his or her ability to complete an advanced academic degree:

_____ Highly recommended _____ Recommend with reservation
_____ Recommend _____ Not recommended

Signature _____ Date _____

Please print name _____

Institution _____

Position _____ Telephone number/e-mail address _____

Please place the completed form in the addressed and stamped envelope provided by the applicant. Please be sure to seal the envelope and sign it across the seal before returning it to the applicant.

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Last Name First Name Middle/Former

Social Security Number _____ - _____ - _____

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Name of Reference: _____

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_____ I waive my right to inspect the contents of this recommendation. _____ I do not waive my right to inspect the contents of this recommendation.

Signature _____ Date _____ Signature _____ Date _____

SECTION 2 (to be completed by reference)

Christopher Newport University values your comments on the suitability of this applicant to do graduate work and will hold your comments in confidence if the applicant has signed the above waiver.
How long and in what capacity have you known the applicant? _____

Please carefully assess the applicant in the following areas. In making the assessment, compare the applicant to other individuals you have known who have similar levels of experience and education.

	Superior	Good	Average	Poor	Unknown
Intellectual ability	_____	_____	_____	_____	_____
Ability to analyze a problem and formulate a solution	_____	_____	_____	_____	_____
Competence in applicant's general field	_____	_____	_____	_____	_____
Self-reliance	_____	_____	_____	_____	_____
Leadership	_____	_____	_____	_____	_____
Creativity/innovation	_____	_____	_____	_____	_____
Motivation	_____	_____	_____	_____	_____
Self-discipline	_____	_____	_____	_____	_____
Cooperativeness	_____	_____	_____	_____	_____
Oral communication skills	_____	_____	_____	_____	_____
Written communication skills	_____	_____	_____	_____	_____
Initiative	_____	_____	_____	_____	_____
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Please use the space on the other side of this application to elaborate on the applicant's qualifications.

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Your overall assessment of the applicant as to his or her ability to complete an advanced academic degree:

☐ Highly recommended ☐ Recommend with reservation
☐ Recommend ☐ Not recommended

Signature _____ Date _____

Please print name _____

Institution _____

Position _____ Telephone number/e-mail address _____

Please place the completed form in the addressed and stamped envelope provided by the applicant. Please be sure to seal the envelope and sign it across the seal before returning it to the applicant.

Thank you for assisting Christopher Newport University with its graduate application process.



TRANSCRIPT REQUEST FORM

NOTE: This request is to be sent to your previous college, not returned to Christopher Newport University.

TO: _____
Name of College or University

PLEASE SEND AN OFFICIAL COPY OF MY TRANSCRIPT TO:

**Office of Admissions
Christopher Newport University
One University Place
Newport News, VA 23606-2998**

Name _____
Last Name First Name Middle/Former Name

Social Security Number _____

Date of Attendance _____

Date of Birth _____

Student Signature

Date



TRANSCRIPT REQUEST FORM

NOTE: This request is to be sent to your previous college, not returned to Christopher Newport University.

TO: _____
Name of College or University

PLEASE SEND AN OFFICIAL COPY OF MY TRANSCRIPT TO:

**Office of Admissions
Christopher Newport University
One University Place
Newport News, VA 23606-2998**

Name _____
Last Name First Name Middle/Former Name

Social Security Number _____

Date of Attendance _____

Date of Birth _____

Student Signature

Date

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CHRISTOPHER NEWPORT UNIVERSITY



Contact Information

Admissions Office	(757) 594-7015
Admissions Office Toll-free	(800) 333-4CNU
Admissions Office FAX	(757) 594-7333
Bookstore	(757) 599-5170
Career and Counseling Services	(757) 594-7047
Cashier's Office	(757) 594-7042
Dean of Students	(757) 594-7160
Director of Graduate Studies	(757) 594-7052
Disability Support Services	(757) 594-8763
Disability Support Services	TDD (757) 594-7938
Virginia Relay Center	TDD (800) 828-1120
Financial Aid Office	(757) 594-7170
Graduate Studies Office	(757) 594-7544
Health and Wellness Services	(757) 594-7661
Library Information	(757) 594-7133
President's Office	(757) 594-7002
Program Coordinators:	
MAT	
<i>Dr. Marsha Sprague</i>	(757) 594-7973 or msprague@cnu.edu
M.S. in Applied Physics & Computer Science	
<i>Dr. David Hibler</i>	(757) 594-7360 or dhibler@pcs.cnu.edu
M.S. in Applied (I/O) Psychology	
<i>Dr. Thomas Berry</i>	(757) 594-7934 or berry@cnu.edu
M.S. in Environmental Science	
<i>Dr. James Reed</i>	(757) 594-7307 or reed@cnu.edu
Master of Public Safety Leadership	
<i>Dr. Peter Carlson</i>	(757) 594-7874 or pcarlson@cnu.edu
Provost's Office	(757) 594-7050
Registrar/Student Records	(757) 594-7155
Student Accounts	(757) 594-7195
University Police	(757) 594-7053
Veterans Affairs Office	(757) 594-7175

Internet address: <http://www.cnu.edu>
E-mail address: gradstdy@cnu.edu

OFFICE OF ADMISSIONS
1 UNIVERSITY PLACE
NEWPORT NEWS, VIRGINIA 23606-2998
757-594-7544 • 800-333-4268
www.cnu.edu

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