CHRISTOPHER NEWPORT

UNIVERSITY

Graduate Catalog
1998-99

Academic Calendar

Fall 1998

August 3	**Intent to Graduate** form due by 2:00 p.m. to the Office of Graduate Studies for December 1998 Degree Completion
August 24	Classes Begin
August 24-28	Drop/Add and Late Registration
September 7	Labor Day - Holiday - Classes Meet
October 10	Fall Recess begins after last class meets
October 14	Classes resume at 8:00 a.m.
October 28	Last Day to Withdraw Without Grade Penalty
November 24	LAST DAY FOR THESIS FORMAT REVIEW Thanksgiving Recess begins after last class meets
November 30	Classes resume at 8:00 a.m.
December 4	**Thesis/Portfolio/Culminating Project FINAL COPY** Due by 2:00 p.m. to the Office of Graduate Studies for December 1998 Degree Completion
December 5	Classes end
December 7-12	Final Examinations
December 14	Final Grades due at 12:00 Noon

Spring 1999

January 4	**Intent to Graduate** form due to the Office of Graduate Studies for May or August 1999 Degree Completion
January 18	Classes begin
January 18-22	Drop/Add and Late Registration
March 6	Spring Recess begins after last class meets
March 15	Classes resume at 8:00 a.m.
March 29	Last Day to Withdraw Without Grade Penalty
April 23	LAST DAY FOR THESIS FORMAT REVIEW
April 30	**Thesis/Portfolio/Culminating Project FINAL COPY** due by 2:00 p.m. to the Office of Graduate Studies for May 1999 Degree Completion
May 1	Classes end
May 3-8	Final Examinations
May 10	Final Grades due at 12:00 Noon
May 15	Commencement

Summer 1999

Term 2	
May 11	Classes Begin, Drop/Add and Late Registration
May 21	Last Day to Withdraw Without Grade Penalty
May 27	Classes End
May 28	Final Examinations
Term 3	
June 2	Classes Begin
June 2-3	Drop/Add and Late Registration
June 17	Last Day to Withdraw Without Grade Penalty
July 1	Classes End
July 2	Final Examinations
Term 4	
June 2-3	Classes Begin
June 2-4	Drop/Add and Late Registration
July 7	Last Day to Withdraw Without Grade Penalty
August 2	**Intent to Graduate** form due by 2:00 p.m. to the Office of Graduate Studies for December 1999 Degree Completion
August 2-3	Classes End
August 4-5	Final Examinations
Term 5	
July 7	Classes Begin
July 7-8	Drop/Add and Late Registration
July 22	Last Day to Withdraw Without Grade Penalty
July 29	LAST DAY FOR THESIS FORMAT REVIEW
August 2	**Intent to Graduate** form due by 2:00 p.m. to the Office of Graduate Studies for December 1999 Degree Completion.
August 5	Classes End **Thesis/Portfolio/Culminating Project FINAL COPY** due by 2:00 p.m. to the Office of Graduate Studies for August 1999 Degree Completion
August 6	Final Examinations

Christopher Newport University Graduate Catalog 1998-1999

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University Catalog Information

Christopher Newport University reserves for itself and its departments the right to supplement, withdraw, or change this catalog without prior notification. Graduate students are held individually responsible for the information contained in the *1998-1999 Christopher Newport University Graduate Catalog*. Interpretations of matters in this catalog are the responsibility of the Provost or the appropriate vice president. The President of Christopher Newport University has final authority in matters of such interpretation.

University Affirmative Action/Equal Opportunity Policy

Christopher Newport University, as an affirmative action/equal opportunity institution, does not discriminate in admission, employment, or any other activity, on the basis of race, sex, color, age, religion, veteran status, national origin, disability, or political affiliation.

Table of Contents

Wingfield Hall

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, then, 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. The University began offering graduate programs in July 1991 and in July 1992 was renamed Christopher Newport University.

The University derives its name from Captain Christopher Newport who was put "in sole charge and command" of the small squadron of three ships which landed at Jamestown in 1607.

Mission

Christopher Newport University is a comprehensive, coeducational, state-assisted institution within Virginia's public university system. An academic community founded on the ideals of excellence, integrity, mutual respect, and service, the University is committed to the search for truth, and dedicated to the discovery, interpretation, dissemination, and application of knowledge. The University provides an education that develops the student's intellectual, ethical, spiritual, and physical attributes. It prepares its students to pursue lives with meaning and purpose and to become responsible and contributing members of society. As an American university with a global perspective, Christopher Newport University enhances student awareness and appreciation of the diversity that enriches us while building a community which unites us. It embodies the noble American maxim *E Pluribus Unum*, that is "From Many, One."

The University focuses on excellence in teaching and scholarship. The liberal arts provide the foundation for quality undergraduate programs in the humanities, in the natural and social sciences, and in business and the professional disciplines. Graduate programs provide students and faculty opportunities for advanced scholarship and learning. Graduate and undergraduate research brings students and faculty together to increase knowledge. Teaching, research, and community service benefit the constituencies of the University, the Virginia Peninsula, the Commonwealth, the nation, and the world.

Organization

The University is organized and instruction is provided to take into consideration the lifelong learning interests and needs of a largely part-time and mobile student body. The University offers programs of equivalency testing and other nontraditional means of earning college level academic credit, and it cooperates with other colleges and local agencies with diverse missions. In these ways the University expands its learning resources and offers programs and transfer credit policies to meet the needs of its students, many of whom transfer from other academic institutions.

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.

The academic areas of the University are divided into the College of Liberal Arts, and the College of Business, Science and Technology, each administered by a college dean. Individual faculty members are responsible to the college deans and to the Provost in all matters pertaining to instruction. The graduate program is administered by the Director of Graduate Studies, with teaching and research carried out by the graduate faculty.

Organization of the Academic Year

The University year is divided into two semesters, August to December (Fall Semester) and January to May (Spring Semester); a mini session beginning in early May and ending in late May; and three or four summer sessions. Graduate sudents may be admitted to the University for full or part-time study beginning the fall or spring semesters or prior to any summer session. The current academic calendar is printed on the inside of the front cover.

Accreditation

Christopher Newport University is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools 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 the cities of Newport News, Hampton, Williamsburg, Virginia Beach, Norfolk, Chesapeake, Portsmouth, Smithfield, Gloucester, Poquoson, and the many surrounding counties. 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, including graduate students. These services and facilities are described fully in the *1998-1999 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 by 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 will want to contact the counselor well before beginning their first semester if special services will be required. While consultation with the counselor 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, Administration Building Room 125.

In order to determine needs and provide the best services possible students may be asked to provide recent documentation concerning their disability. Such documentation would include the disability and suggestions for possible accommodation to enhance student access and/or success in the programs and activities of the University. Questions should be directed to Deborah Witt by mail or by calling (757) 594-8850, TDD (757) 594-7938 or TDD (800) 828-1120, the Virginia Relay Center.

Graduate Studies

Master of Arts in Teaching

A practitioner-oriented graduate program that is 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 four 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 (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. The degree is also an asset for managers, business owners, and others who seek to enhance knowledge, skills, and/or credentials.

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 Science in Nursing

This master's program emphasizes the specialty role development of the nurse case manager. The program was begun in 1995, admitting students from a variety of work experiences including nursing care in home health, psychiatry, acute care, public health and community health. Through clinical experiences, guest lecturers and classroom instruction, students are exposed to a variety of health care settings that utilize the nursing case management process.

Students using reference computers in the library.

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. Through hands-on activities, discussion and research, this program offers the latest advancements in content area teaching. The curriculum explores concepts and skills needed for more effective classroom teaching.

All students will study major learning theories in light of congruent instructional practices. An emphasis is placed on the study of diversity in the United States and implications of that diversity for educational programming and practice. Teachers are consumers and producers of research, and as such, will have the opportunity to focus on concepts, methodologies and procedures of educational research.

MAT students select a concentration in content areas of language arts, mathematics or science. A separate language arts track is available for those who hold licensure and those who are seeking licensure. Courses in language, literature and writing are offered within each track. The mathematics track offers middle and high school teachers a chance to explore mathematics pedagogy as recommended by the National Council of Teachers of Mathematics (NCTM). The science track focuses on environmental education and provides a solid background in ecological and environmental issues.

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.

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 research and theory 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 program is based on recognized needs in teacher education as identified by bodies such as the National Commission on Excellence in Education 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. Scores from the PRAXIS I for the MAT-Licensure Track or scores from the specialty test for those holding licensure.

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. However, if the student intends to pursue the MAT, he or she must change to degree-seeking status within the first 12 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 the content area. A student teaching experience serves as the culminating event.

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 or summative experience and 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**
PSYC 500	Human Learning or	
EDUC 500	Learning Theory, Classroom Practice	3
EDUC 501	Multicultural Education	3
EDUC 502	Teachers as Researchers	3
Area II:	**Specialty Courses**	
Specialty	Courses (see below)	18
Area III:	**Capstone and Application Courses**	
EDUC 522	Integrated Curriculum or	
EDUC 524	Standards-Based Curriculum	3
EDUC 649	Advanced Instructional Strategies	3
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, 510,	from ENGL 510-518
ENGL 512	Reading Multicultural Literature (3)	512, or 513	
ENGL 513	Reading Native American Literature (3)		
ENGL 514	Advanced 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 520	The Reading and Writing of Poetry (3)	3 Credits required	9 Credits required
ENGL 521	Teaching Composition in L.A. Classes	from ENGL 520-523	from ENGL 520-532
ENGL 523	The Way of the Writer (3)		
ENGL 524	Journalism: Teaching of Reporting, Writing and Editing (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	Sociolinguistics (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 ENGL 308, Approaches to Literature, and ENGL 309, Prose Writing, or their equivalents plus specific requirements by level, as indicated below.

Elementary

12 hours	English, including basic composition
12 hours	Social Studies, including history, government and geography
12 hours	Mathematics, including MATH 308 or equivalent
11 hours	Science, including one laboratory class
03 hours	Technology Course (EDUC 406)
03 hours	Human Growth and Development (including pre-adolescence)

Middle

12 hours	English, including basic composition
15 hours	History and Social Science (at least six in each)
15 hours	Mathematics and Science (at least six in each) including MATH 309 or equivalent
18 hours	Concentration other than English (mathematics, social studies or science)
03 hours	Technology Course (EDUC 406)
03 hours	Human Growth and Development (including adolescence)

Secondary

Degree in English

03 hours	Technology Course (EDUC 406)
03 hours	Human Growth and Development (including adolescence)

MAT Language Arts with Licensure Program of Study 36 Credits

Education Courses (24 Credits)

EDUC 501	Multicultural Education (3)
EDUC 510	Internship (6)
EDUC 516	Curriculum and Instruction (3)
EDUC 521	Early Literacy (3) or
EDUC 523	Teaching Reading and Writing in Middle and Secondary Schools (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)		3 Credits required from ENGL 501, 512 or 516
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 Children's Literature (3)	3 Credits required from ENGL 514 or 515	
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 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 530	Advanced Grammar and Linguistics (3)	Required	Required
ENGL 531	Teaching English as a Second Language (3)		
ENGL 532	Sociolinguistics (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 program in mathematics and science is 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 perform 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 spread 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 middle school level must have at least four semester courses in mathematics and two 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 34 Credits

Area I: Introductory Courses		Credit Hours
PSYC 500 / EDUC 500	Human Learning or Learning Theory, Classroom Practice	3
EDUC 501	Multicultural Education	3
EDUC 502	Teachers as Researchers	3
Area II: Specialty Courses		
Specialty Courses (see below)		18
Area III: Capstone, Thesis or Project		
EDUC 695	Capstone Seminar	1
MATH 699	Mathematics-Thesis or Culminating Project	6
TOTAL		34

Specialty Courses		Middle	Secondary
MATH 570	Advanced Instructional Strategies in Mathematics (3)	Required	Required
MATH 573	History of Mathematics (3)	Required	
MATH 575	Computer Software and Calculators in School Mathematics (3)	Required	
MATH 576	Mathematical Connections (3)	Required	
MATH 578	Elementary Geometry from an Advanced Viewpoint (3)	Required	Required
MATH 579 / MATH 581	Modern Analysis (3) or A Second Course in Abstract Algebra (3)		Required
MATH 584	Mathematics Cognition (3)	Required	Required
MATH 591	Directed Research and Internship for Educators (3)		
Electives from the above Mathematics courses			6 Credits required

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, chemistry and physics; at least two of the four science courses must include a laboratory component.

MAT Science Program of Study 34 Credits
Environmental Education

Area I:	Introductory Courses	Credit Hours
PSYC 500 / EDUC 500	Human Learning or Learning Theory, Classroom Practice	3
EDUC 501	Multicultural Education	3
EDUC 502	Teachers as Researchers	3
Area II:	**Specialty Courses**	18
BIOL 530	Biogeography (3)	
BIOL 584, 584L	The Environment and The Environment Laboratory (4)	
BIOL 585 / BIOL 589	Marine Biology (3) or Oceanography (3)	
CPSC 580	Computer Technology in the Classroom (3)	
ENVS 522	Summer Field Studies (2)	
ENVS 525	Environmental Regulations (3)	
Area III:	**Capstone, Thesis or Project**	
EDUC 695	Capstone Seminar	1
BIOL 699	Science-Thesis or Culminating Project	6
TOTAL		34

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;
- 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.

Graduate Assistantships

See page 60 of the catalog for specific terms, criteria and procedures.

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.

PSYC 500. Human Learning (3-3-0)
Review of contemporary theories of cognitive development and learning as they address issues related to the individual's interaction with teacher, peers and educational technologies. Practical applications of theory to classroom environments are emphasized.

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. Teaching Reading and Writing in Middle and Secondary Schools (2-2-0)
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 523L. Teaching Reading and Writing in Middle and Secondary Schools Laboratory (1-0-2)
Corequisite: EDUC 523.
Applied classroom experiences in teaching reading and 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 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/Project (6 Credits, taken in increments)
The student may not proceed beyond the first credit without committee approval of the proposal.

Language Arts Track

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 female and male authors of diverse racial, religious, regional, and ethnic backgrounds in the United States. 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 Children's Literature (3-3-0)
This course examines the history of children's literature and changes in the concept of childhood. Issues to be discussed include censorship and canon formation, especially in relation to contemporary works for children.

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 pedegogical 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.

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 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 teaching composition by the writing process.

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 530. Advanced Grammar and Linguistics (3-3-0)
Intensive study of theories and practices relevant to instruction. Emphasis on language history, theoretical and applied linguistics as they influence language acquisition, dialects, grammar, standard and nonstandard usage.

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 Sociolinguistics (3-3-0)
This course covers a variety of issues related to the social dimensions of language use: dialect formation and variation, social and ethnic identity through language, gender distinctions in communication, and social aspects of bilingualisms, as well as other topics of educational interest.

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 Track

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 Lebesque integral.

MATH 581. A Second Course in Abstract Algebra (3-3-0)
This course covers topics in abstract algebra which are not covered in a first course. Topics include Sylow's Theorem, Module Theory, Galois Theory and their applications.

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 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 Track

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, 584L. The Environment and The Environment Laboratory (4-3-4)
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. 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 599. Independent Study (1-6 Credits)

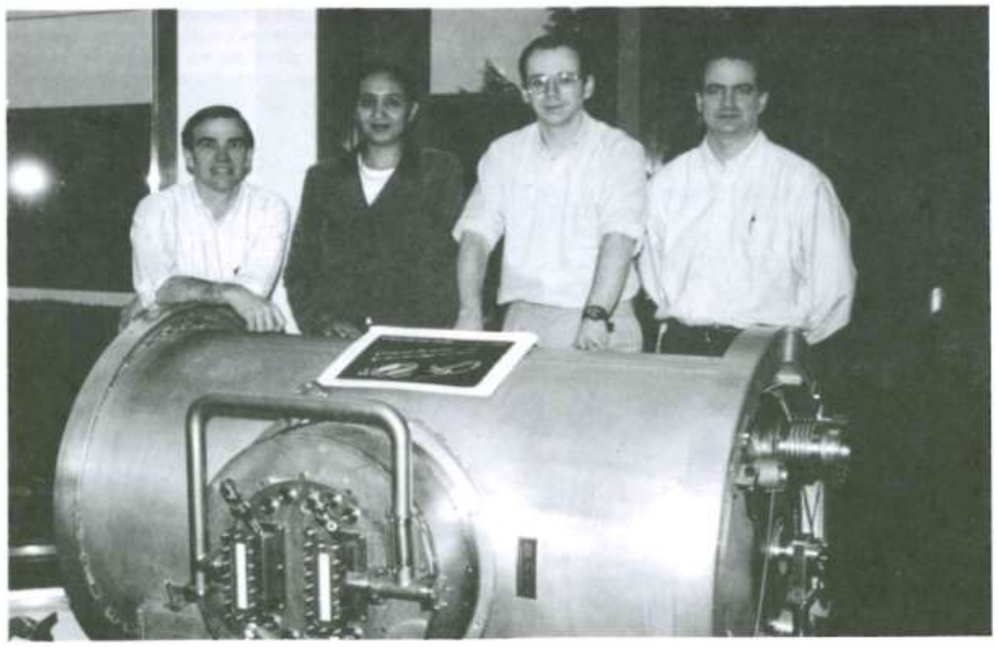
BIOL 699. Thesis Research or Culminating Project (6 Credits, taken in increments)
The student may not proceed beyond the first credit without committee approval of the proposal.

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 522. Summer Field Studies (2-0-2)
Prerequisites: Permission of instructor.
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.

Dr. Jane Bailey and the graduate students in EDUC 516, Curriculum and Instruction in Elementary Schools



Dr. D. Doughty, Dr. L. Elouadrhiri, Dr. D. Heddle and Dr. J. Hardie stand behind the Cryounit, part of the linear accelerator at the Jefferson Lab. The CNU nuclear physics collaboration is part of an international collaboration involving scientists from thirty-two colleges and universities world-wide.

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 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, NASA-Langley 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, a thirty credit-hour program, is built around a core of physics and computer science courses that are the foundation of the four areas of concentration: computer science, instrumentation and advanced computer systems, modeling and simulation, and solid state systems.

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 in the student's major undergraduate program.
2. An official transcript from the baccalaureate institution, and official transcripts for all graduate work taken at other institutions.
3. Three letters of recommendations 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 requesting a waiver is required.
5. International applicants must supply their TOEFL scores and the documentation as stated on page 47.

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. This program is also designed to serve students who want advanced study in the electronic or optical properties of materials, computer science, computer systems 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

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 an non-degree student apply and be accepted to degree-seeking status. Should an 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.

Curriculum

Each of the concentrations requires four core courses, plus four concentration courses and a thesis that includes a design course.

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 Integrated Modeling and Simulation Environments (PHYS 649) and Design of Solid State Systems and Sensors (PHYS 639), 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

Summary of Program Requirements:

1. 30 Semester hours minimum: 12 hours of core courses; 12 hours of specialty courses in an area of concentration; 6 hours of thesis of which 3 hours are from a design course.
2. Passing the Thesis Proposal/Oral Comprehensive Exam at the end of the design course for the concentration.
3. Written thesis and oral defense of the thesis.
4. Presentation of an electronic copy of the thesis in a suitable format to the department for archive purposes only.

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. A course in computer organization and architecture is also recommended. 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*.

Computer Science Concentration Program of Study

Core Courses (12 credit hours, choose any four courses from the following list):

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 Operating Systems (3) (2nd semester)

Concentration Courses (12 credit hours 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 CPSC 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.

Artificial Intelligence Emphasis
CPSC 510 Artificial Intelligence I (3) (Core Course)
CPSC 642 Artificial Intelligence II (3)

Communications Emphasis
CPSC 502 Communications I (3) (Core Course)
CPSC 611 Communications II (3)

Computer Architecture Emphasis
CPSC 521 Computer Architecture (3) (Core Course)
CPSC 621 Parallel Processing (3)

Software Engineering Emphasis
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)**

CPSC 619 Computer System Design (3), and
APCS 699 Thesis Research can be taken only upon successful completion of CPSC 619 design course (3 credits, thesis may be taken in 1 credit increments)

*Students in these courses are required to attend all thesis proposals and defenses that occur during the course.

Instrumentation and Advanced Computer Systems 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*.

Instrumentation & Advanced Computer Systems Concentration Program of Study

Core Courses (12 credit hours):

PHYS 501	Models of Dynamical Systems (3) (1st semester)
PHYS 503	Data Acquisition and Instrumentation (3) (1st semester)
CPSC 501	Software System Design and Implementation (3) (1st semester)
CPSC 502	Communications I (Computer Networks) (3) (2nd semester)

Concentration Courses (12 credit hours):

PHYS 521	Computer Architecture (3)
PHYS 522	Microprocessor-based Systems (3)
CPSC 621	Parallel Processing (3) and either :
PHYS 621	Digital Signal Processing (3), or
CPSC 611	Communications II (3)

***Design Course and Thesis (6 credit hours)**

PHYS 629	Instrumentation Systems Design (3), or
CPSC 619	Computer System Design (3), and
APCS 699	Thesis Research can be taken only upon successful completion of PHYS 629 or CPSC 619 design course (3 credits, thesis may be taken in 1 credit increments)

* Students in these courses are required to attend all thesis proposals and defenses that occur during the course.

Modeling and Simulation Concentration

Academic Prerequisites

All applicants should have completed a three semester sequence in physics including modern physics and at least two labs; a five semester sequence in mathematics including calculus, matrix methods and differential equations; and programming including data structures. 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*.

Modeling and Simulation Concentration Program of Study

Core Courses (12 credit hours):

PHYS 501	Models of Dynamical Systems (3) (1st semester)
PHYS 504	Electromagnetic Theory (3)(2nd semester)
CPSC 501	Software System Design and Implementation (3) (1st semester)
CPSC 502	Communications I (Computer Networks) (3) (2nd semester)

Concentration Courses (12 credit hours):

PHYS 502	Quantum Physics (3)
PHYS 506	Thermodynamics and Statistical Physics (3)
MATH 580	Advanced Numerical Analysis (3)
PHYS 541	Modeling and Simulation (3)
CPSC 642	Artificial Intelligence II (3) (suggested elective course)

***Design Course and Thesis (6 credit hours)**

PHYS 649	Design of Integrated Modeling and Simulation Environments (3), and
APCS 699	Thesis Research can be taken only upon successful completion of PHYS 649 design course (3 credits, thesis may be taken in 1 credit increments)

* Students in these courses are required to attend all thesis proposals and defenses that occur during the course.

Solid State Systems Concentration

Academic Prerequisites

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

Solid State Systems Concentration Program of Study

Core Courses (12 credit hours):

PHYS 501	Models of Dynamical Systems (3) (1st semester)
PHYS 503	Data Acquisition and Instrumentation (3) (1st semester)
PHYS 504	Electromagnetic Theory (3) (2nd semester)
CPSC 501	Software System Design and Implementation (3) (1st semester)

Concentration Courses (12 credit hours):

PHYS 502	Quantum Physics (3)
PHYS 506	Thermodynamics and Statistical Physics (3)
PHYS 631	Physics of Solids (3)
and either:	
PHYS 531	Optical Physics (3), or
PHYS 634	Superconductive Materials and Devices (3)

***Design Course and Thesis (6 credit hours)**

PHYS 639	Design of Solid State Systems and Sensors (3), and
APCS 699	Thesis Research can be taken only upon successful completion of PHYS 639 design course (3 credits, thesis may be taken in 1 credit increments)

* Students in these courses are required to attend all thesis proposals and defenses that occur during the course.

Academic Policy for Thesis Proposal/Comprehensive Oral Exam

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.

Graduation Requirements

- Successful completion of minimum 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;
- 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.

Graduate Assistantships

Applicants wishing to be considered for a teaching assistantship must apply by May 1 for the following fall semester. Research Assistantships are generally only awarded to second year students. See page 60 of the catalog for specific terms, criteria and procedure.

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 an M.S. in Applied Physics and Computer Science from CNU. Contact the Program Coordinator (594-7360) for information.

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, Advanced 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 Instrumentation and Advanced Computer Systems. 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 thesis 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. Superconductive Materials and Devices (3-3-0)
Prerequisite: PHYS 631.
Introduction to superconductivity. Properties of conventional superconductors. Theory of type-II superconductors and the Josephson effect. Properties of high temperature superconductors including crystallography, electronic structure, synthesis, thermal and transport properties, and magnetic properties. Overview of applications of superconductors. Extensive 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 thesis 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 thesis proposals and all defenses of thesis that occur during the course.

APCS 699. Thesis Research (Credits vary)
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 and 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 and 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. 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 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 thesis 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.

APCS 699. Thesis Research. Credits vary.
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 all defenses of thesis that occur during the course.

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 (Industrial/Organizational)

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.

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 employer quality of worklife. The degree is also an asset for managers, business owners and others who seek to enhance knowledge, skills and/or credentials.

This master's program is designed to meet the needs of working professionals who seek to combine part-time course work with a full-time career.

The Master of Science in Applied (Industrial/Organizational) Psychology

The Master of Science in Applied Psychology with a concentration in Industrial/Organizational Psychology is designed to train individuals to apply the concepts, methods, principles and knowledge of psychology to people at work. This master's program uses 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, 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 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.
4. Combined scores of 950 or higher on the quantitative and verbal sections of the Graduate Record Examination, and scores from the Graduate Record Examination Psychology Subject Test, all 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. 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, (c) experimental psychology (research methodology), and (d) one of the following courses: physiological psychology, sensation and perception, history and systems of psychology, tests and measurements, or motivation. The experimental psychology (c) prerequisite can be met through satisfactory completion of PSYC 501. The prerequisite options listed above in (d) can be met through satisfactory completion of PSYC 506.

Goals of the Program

The program curriculum 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 graduate program 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. The curriculum for this master's program has been designed to fulfill this objective. The curriculum includes courses that 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. A minimum of 33 hours is required.

M.S. in Applied (I/O) Psychology Program of Study 33 Credits

Core Courses (15 Credits)
- 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 (12 Credits)
- PSYC 503 Training and Development in Organizations (3)
- PSYC 513 Group Dynamics (3)
- PSYC 623 Organizational Psychology (3)
- PSYC 633 Advanced Personnel Psychology (3)

Support and Elective Courses
- PSYC 501 Statistics I: Design and Analysis* (3)
- PSYC 595 Advanced Topics in Psychology (3)
- PSYC 691 Graduate Practicum in Industrial/Organizational Psychology (3)

Thesis (6 Credits)
- PSYC 699 Thesis Research

*May be required if statistics placement test is not passed.

Graduation Requirements

- Successful completion of minimum hours of the M.S. in Applied (I/O) Psychology 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.

Graduate Assistantships

See page 60 of the catalog for specific terms, criteria and procedures.

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. 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.

M.S. in Environmental Science

The Biology, Chemistry and Environmental Science faculty are actively engaged in teaching and research. Last fall, 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 a large ecological study site in rural Gloucester County, a marine station on the Eastern Shore 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 an 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 are 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 in preparation for the degree mentioned that a first-hand knowledge of the environment and environmental assessment methods are critical, but often missing.

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 recommendations 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 requesting a waiver is required.

Academic Prerequisites

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

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 (3)
BIOL	510	Biometry Laboratory (2)
ENVS	505	Technical and Scientific Writing (2)
ENVS	518	Biological Conservation: Theory and Practice (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 (2)
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

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.

Graduate Assistantships

See page 60 of the catalog for specific terms, criteria and procedures.

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)
Corerequisite: 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 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 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 520. Conservation and Mitigation Methods Seminar (2-2-0)
Prerequisites: BIOL 407-General Ecology.
A combination lecture and seminar course in which general conservation issues and mitigation methods are evaluated. Course content varies depending on the interests of the students. Topics include basic conservation issues such as fragmented populations, metapopulations, the factors that make species vulnerable to extinction, and the relationships of various human societies to the environment. Current conservation strategies including corridors, reserves, captive breeding programs, reintroductions, and economic incentives are discussed. Mitigation procedures such as wetlands construction and "set asides" are evaluated. The nature of existing and proposed legal protection offered by state, federal, and international laws and agreements are also covered. Specific conservation and mitigation projects are investigated and evaluated.

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 H_2O 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.

Captain John Smith Library

Master of Science in Nursing

Graduate education in the Master of Science degree in Nursing Case Management is directed toward professional clinicians who practice in a variety of clinical settings within the health care system. Major goals of integrating the case management process into nursing care are to decrease fragmentation of services, increase quality, define care outcomes and constrain costs.

Due to the interdisciplinary focus of the case management specialization, students enroll in four courses outside the Nursing Department: Organizational Theory, Advanced Statistics for the Health Sciences, Health Care Finance, and Computer Applications for Health Care Professionals. These courses, as well as the required graduate nursing courses, enable the M.S. in Nursing student to learn the complexities of cost containment through effective clinical management of health care services.

Clinical experiences are in variety of situations, including insurance, acute care, subacute care, assisted living and community care settings. All clinical experiences offered have a case management component to enhance student learning as a practicum.

The Master of Science in Nursing

The Master of Science in Nursing program prepares nurses to practice in the advance practice role of the nurse case manager. The focus of this specialty program is to provide a graduate nursing curriculum that is responsive to the changing managed health care system and its members. In addition to theoretical study, clinical experiences include a 186 hour practicum in a variety of case management settings under the preceptorship of experienced case managers.

Admission Requirements for Degree-seeking Students

Moratorium-No New Students Accepted At This Time.
The program is under review in its current state.

1. A baccalaureate degree in nursing from an NLN accredited school of nursing 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. The letters of recommendation must be from two academic and one professional source.
4. A license to practice professional nursing in Virginia.
5. A minimum of one year of clinical nursing practice and appropriate malpractice insurance.
6. Scores from the Graduate Record Examination General Test taken within five years prior to the date of admission.

Academic Prerequisites

Students will need to provide evidence of satisfactory completion of undergraduate courses in health assessment, computer science, statistics, and ethics with a minimum grade of C.

Goals of the Program

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

1. Select theories from nursing and supporting sciences to design service plans for clients that achieve quality outcomes for clients and control the use of resources.
2. Implement research studies that add to the scientific basis for the practice of nursing case management.
3. Provide leadership in the role of nurse case manager to promote nursing practice, influence health care decisions, increase control over cost for health care, and insure quality health care.
4. Assume responsibility for contributing to the development of a health care delivery system that is accessible and equitable.
5. Assume responsibility for contributing to the advancement of nursing within the health care delivery system.

Curriculum

The program of study is nursing graduate courses (22 credit hours), interdisciplinary graduate courses (12 credit hours), and thesis (6 credit hours). Students integrate and apply concepts and theories from management and leadership, finance, managed care delivery systems, organization theory, advanced statistics, and applied computer systems, in addition to nursing theories and models.

Master of Science in Nursing Program of Study 40 Credits

Nursing Courses (22 Credits)
NURS 510 Nursing Theory (3)
NURS 520 Nursing Research Methods (3)
NURS 530 Health Care Delivery System (3)
NURS 540 Nursing Case Management I (5)
NURS 550 Nursing Case Management II (5)
NURS 560 Seminar in Long and Short Term Care Needs (3)

Interdisciplinary Courses (12 Credits)
CPSC 581 Computer Applications for Health Care Professionals (3)
FINC 535 Health Care Finance (3)
MATH 535 Advanced Statistics for Health Sciences (3)
PSYC 523 Organizational Theory (3)

Thesis (6 Credits)
NURS 699 Thesis Research (6)

Graduation Requirements

- Successful completion of minimum hours of the M.S. in Nursing 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.

Graduate Assistantships

See page 60 of the catalog for specific terms, criteria and procedures.

M.S. in Nursing Courses of Instruction

Nursing

NURS 510. Nursing Theory (3-3-0)
Major theories and conceptual frameworks that serve as the basis for professional nursing are examined. The study begins with a review of the development of nursing theory examining epistemological issues and barriers to theory development. Students expand their expertise in using theory as a basis for their professional practice and develop beginning skills of critique using several models of theory evaluation.

NURS 520. Nursing Research Methods (3-3-0)
Prerequisite: NURS 510.
The focus of this course is the principles and methods of nursing research and the interconnectedness of research, theory and practice. Students read extensively to identify researchable questions significant to nursing case management and develop initial drafts of a research proposal aimed at answering selected research questions. Available research funding from a variety of sources is addressed and investigated.

NURS 530. Health Care Delivery System (3-3-0)
Prerequisite: NURS 510 and NURS 520.
Pre or corequisites: NURS 540 and NURS 699 (Full-time students only).
A study of the current and evolving structure and function of the United States health care delivery system includes the historical, political, social, ethical and economic influences that affect the system. Students study the full spectrum of service alternatives (formal and voluntary), the limitations of the services, the accessibility and availability of specific services, and ways to integrate a variety of services so that client needs are met.

NURS 540. Nursing Case Management I (5-3-6)
Prerequisite: NURS 510, NURS 520, PSYC 523, FINC 535, MATH 535.
Pre or corequisites: NURS 530, CPSC 581 and NURS 699 (Full-time students only).
The theoretical and practical development of the delivery model known as case management is examined. This course provides an overview of the various models of nursing case management and process components. An in-depth assessment of the role of the advance practice nurse case manager is reviewed. Client advocacy, confidentiality, and holistic care delivery are emphasized.

The clinical lab component is 84 hours. Clinical areas include demand management, wellness programs and social programs. A preceptored model is utilized.

NURS 550. Nursing Case Management II (5-3-6)
Prerequisite: NURS 510, NURS 520, NURS 530, NURS 540, PSYC 523, FINC 535, MATH 535, CPSC 581.
Pre or corequisites: NURS 560 and NURS 699 (Full-time students only).
The focus of this course is to critically explore the application process of the case management model. Methods for analyzing client outcomes are presented. Concepts of health promotion and disease prevention are defined using epidemiological and social data. Delivery of case management in a culturally sensitive manner is reviewed as it pertains to an individual's and community's ethnic, racial, gender, age and abilities background. Additionally, various sites for case management are examined. Ethical decision-making is emphasized.

The clinical lab component is 84 hours, with students having the opportunity to visit established case management programs both in and outside the Hampton Roads area. The focus is in the application of the case management process to a variety of clinical experiences using a preceptored model.

NURS 560. Seminar in Long and Short Term Care Needs (3-3-0)
Prerequisite: NURS 510, NURS 520, NURS 530, NURS 540, PSYC 523, FINC 535, MATH 535, CPSC 581.
Pre or corequisites: NURS 550 (Full-time students) and NURS 699.
This capstone course is a self-directed learning experience that focuses on the analysis of the needs of select client populations requiring long and short term care from nurse case managers and other interdisciplinary team members. The project emphasizes the development of a case management program for a select client population, planning services addressing quality, access and cost.

NURS 595. Advanced Topics in Nursing (Credit varies)
Course topics are selected on the basis of faculty and student interests.

NURS 599. Independent Study (1-6 Credits)

NURS 699. Thesis Research (6 Credits, taken in increments)
Permission of the thesis committee chair.
The preparation, implementation, and defense of the thesis. Students will investigate research questions that are relevant to the role and practice of the nurse case manager.

Computer Science

CPSC 581. Computer Applications for Health Care Professionals (3-3-0)
Use of professional computer software packages for data sorting, analysis, and evaluation. Critique of selected software packages available for health care applications with the aim of establishing criteria for software selection. Description of hardware, computer interface, and software for typical data-gathering tasks appropriate to the health care professional. Direct experience with software packages emphasized.

Finance

FINC 535. Health Care Finance (3-3-0)
An introduction to financial management in the health care environment. Topics include the economics of the health care delivery system, financial accounting and analysis, financial management, budgeting control systems, working capital management, third party reimbursement and trend analysis.

Mathematics

MATH 535. Advanced Statistics for the Health Sciences (3-3-0)
Prerequisite: 3 credits of undergraduate statistics.
The purpose of this course is to prepare the health care student with the necessary mathematical and statistical tools to aid in the writing of the thesis. An important component is the gathering of health care data and its analysis using a statistical computer package such as MINITAB or SPSSX. Topics include data analysis, probability and probability distributions, estimation, hypotheses testing, regressions and correlation, contingency tables, analysis of variance, nonparametric statistics, and multivariate analysis.

Psychology

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.

NON-PROGRAM OFFERINGS

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 monphonic and polyphonic examples and interpret texts from manuscript facsimiles. Students learn about style and performance practices and acquire performance e 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.

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 49 of this catalog.

CNU Administration Building

Policies & Procedures and Personnel

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, sex, handicap, age, veteran status, national origin, religion, 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 teaching and research carried out by the graduate faculty. The Provost has final responsible in all matters pertaining to instruction.

Tuition, Fees and Financial Aid

Tuition and comprehensive fees are established by the Christopher Newport University Board of Visitors. Financial aid consist of scholarships, grants, 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. The *CNU Financial Aid Guide*, contains information on all of the University's financial aid programs.

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 on 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

All 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. For degree-seeking students there is a fee of $40.00; for non-degree students there is no fee. All of the application forms are included in the back section of this catalog and are also available from the Office of Admissions.

College Records

All applicants must submit an official transcript of the 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) in the applicant's major field of study and for the last 60 semester hours of all undergraduate work.

Non-degree applicants must have a minimum grade point average of 2.5 (on a 4.0 scale) in the applicant's major field of study and for the last 60 semester hours of all undergraduate work.

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. Refer to the master's degree program section for specific examination requirements.

Application Deadlines

The application deadlines for degree-seeking students are: August 1 for fall semester, December 15 for spring semester, and May 31 for summer sessions. After these deadlines, applicants may apply to enter as non-degree students. Application deadlines for international students are: July 1 for fall semester, November 15 for spring semester, and May 1 for summer sessions.

Application Materials Deadline

Students seeking admission to graduate studies at Christopher Newport University for the first time must submit the complete set of admission materials by the Last Day to Withdraw Without Grade Penalty of that semester 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.

Application 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 to formulate a 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) in the major field of study and for last 60 semester hours of all undergraduate work. Official transcripts for other graduate work are required, as well as letters of recommendations 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 an non-degree graduate student may be applied to a graduate degree if and when the student becomes a degree-seeking graduate student. An 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 2.5 (on a 4.0 scale) in the applicant's major field of study and for the last 60 semester hours of all undergraduate work. 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 an 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.

Provisional Admission

In exceptional cases, the appropriate academic department may grant provisional admission to a degree-seeking or an non-degree applicant who does not have a complete application. Any deficiencies in the application, such as a lack of scores for the Graduate Record Examination (GRE), 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.

Probationary Admission

If an applicant fails to meet the minimum standards for admission, but is judged to have academic and professional potential, the appropriate department may grant probationary admission. A student admitted with probationary status must earn a minimum 3.00 grade point average on the first six hours of graduate course work attempted to be eligible to continue in the graduate program.

International Students:

Students from other countries with adequate preparation for graduate study are invited to apply for admission at Christopher Newport University. The University is authorized under federal law to enroll non-immigrant alien students. Application deadlines for international students are: July 1 for fall semester, November 15 for spring semester, and May 1 for summer sessions. International applicants who are not U.S. citizens are required to enter the University as a degree-seeking students. Refer to the master's degree program section for specific admission requirements.

Admission Requirements for International Students

International students must apply to enter the University as a degree-seeking student by submitting the specific master's degree program admissions documents. International applicants must provide official academic transcripts translated into English from all colleges and universities currently attending or previously attended, and submit scores from the Test of English as a Foreign Language (TOEFL). Students whose native language is not English, or students who have not received a degree from an institution in an English-speaking country must present a minimum score of 550 on the TOEFL. Applicants must provide a financial resources statement and official bank affidavits guaranteeing that adequate funds are available for university study prior to coming to the United States. Since the University is a state-supported institution, it cannot provide financial aid to international students.

Evaluation of International Credits

International students must seek the assistance of World Education Services (WES) to have their education credentials evaluated. WES will prepare an objective, analytical report that describes the credentials and interprets them in terms of their U.S. equivalents. Contact WES at P.O. Box 745, Old Chelsea Station, New York, NY 10113-0745 or call (212) 966-6311.

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 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 a 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.

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 not enrolled in the University. Students desiring to withdraw from the University should do so 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 term's 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. Auditing students' academic records will indicate AU for such courses rather than a letter grade.

Changes from audit to credit 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.

Students may change from credit to audit up to the last day of class provided they are passing the course.

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.

Commencement Exercises

Commencement exercises (graduation ceremonies) are held once each year in May, when degrees are conferred upon all graduates who have completed degree requirements in the preceding August, preceding December, or May. Students who complete degree requirements in August or December will have diplomas mailed to them. Those who complete degree requirements in May will receive diplomas at the May ceremonies. All prospective graduates will be contacted by the Office of the Registrar concerning rehearsal and attendance at the annual commencement exercises. Those planning to attend 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 academic caps, gowns, and hoods from the University Bookstore. All prospective graduates must keep the Office of the Registrar informed of any address changes. If all requirements are not met by the end of the spring semester, students will not be permitted to participate in the May ceremonies.

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 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. A course designated as (4-3-2), for example, refers to a four-credit course, which has three lecture hours and two laboratory or practicum hours each week.

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, and PSYC 691 only)	
S	Satisfactory (for thesis courses)	
U	Unsatisfactory (for thesis courses)	
AU	Audit	

Plus/Minus

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

Grade of Incomplete

An incomplete (I) grade 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 courses until all the work on the thesis is completed. After the thesis has been written, defended, and accepted, the thesis director 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.

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. Credit for such courses may 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. Written permission from the Director of Graduate Studies is required before an undergraduate student may register for a graduate course. Forms for this purpose are available in the Graduate Studies Office. 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).

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 take graduate courses.

The Director of Graduate Studies will render a final decision on the appeal based upon this committee's recommendation. A student whose appeal is rejected must wait at least one year to appeal again. A student whose appeal is accepted moves on 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 Christopher Newport University.

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, imposed 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

Student who enroll 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 aimed at evaluating the student's proficiency in his or her field is required of all candidates 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 specially 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.

Thesis

Research resulting in the presentation of a thesis may be required by the degree program. Students are expected 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 or summative experience and requires synthesis and evaluation. The Portfolio Interview serves as the comprehensive final examination.

Intent to Graduate Form

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

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 deadline published 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.

Academic Tuition

In-state students	$145 per credit hour
Out-of-state students	$351 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.

General Fees*

Application - Graduate Degree-seeking	$40.00
Registration Fee/Fall and Spring	$20.00
Registration Fee/ Summer Session	$10.00
Late Registration Fee (additional)	$25.00
Academic Transcripts	No Charge
Returned Check Fee (per return)	$20.00
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

* The fees listed above are not refundable.

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

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 Registration Fee

Students who register during late registration will be required to pay a $25 late registration fee which is in addition to the regular registration fee. This fee must be paid if registration is not completed during announced early registration or continuous registration periods.

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.

Student 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 $4,950. (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 $200 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 3:30 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 Students 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 or the week of late registration. Please note that the University charges a $25.00 late registration fee in addition to the regular registration fee of $20.00. The Unversity does not guarantee that students will be able to obtain their original schedules. Classes are on a first-come/first-serve basis. REINSTATEMENT DOES NOT APPLY IF A STUDENT'S REGISTRATION IS CANCELED PRIOR TO LATE REGISTRATION.

Reinstatement

Students who register during late registration must pay on the day they register. On the last day of late registration, the University will cancel the registration for all students who have not paid or made financial arrangements. Beginning on the Monday following the week of late registration, students whose registration was canceled on Friday of late registration week may be reinstated provided they pay the full amount of their financial obligation. Students may be reinstated during the week following late registration for a reinstatement fee of $100.00 plus a $50.00 late payment fee. Students may be reinstated during the second week following late registration 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 late registration. Under no circumstances will reinstatemnts be permitted after this date. REINSTATEMENT DOES NOT APPLY TO STUDENTS WHOSE REGISTRATION WAS CANCELED PRIOR TO LATE REGISTRATION.

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 the this catalog. Failure to read and comply with University regulations will not exempt 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 Sessions

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 $20.00 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 a check for tuition and fees is returned to the University from the bank for any reason there will be a $20.00 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 to the Unviersity 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

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 a full-time or part-time student 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 eligible senior citizen who has completed 75 percent of the requirements towards a degree, the University is authorized to make individual exceptions to such procedures as may be established by the State 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 (located in "Application Forms" section in the back of this catalog) and return it with their applications for admission. Students who are already enrolled at the University must apply for a change of status through the Office of Admissions. Such requests must be made on the Tuition Rate Determination Form. Inquiries should be addressed to the CNU Office of Admissions, One 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 April 1 are normally made by June 30. 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 Administered by CNU Office of Financial Aid

The priority filing date for applying for financial aid administered by Christopher Newport University is April 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 admitted as a degree-seeking graduate student; be enrolled on at least a half-time basis, however some programs may require full-time enrollment; be in good academic standing; and be making satisfactory academic progress.

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 CNU 1998-1999 Application for Financial Aid and a 1998-1999 Free Application for Federal Student Aid (FAFSA) form (allow four to six weeks for processing). April 1 is a priority filing date but applications are accepted on a rolling basis. Both applications must be completed annually.

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 Perkins Loan

The Federal Perkins Loan is a low-interest loan for both undergraduate and graduate students with exceptional financial need. Monthly payments depend on the size of the debt and the length of the repayment period.

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.

Application Requirements

To be considered for the Federal Stafford Student Loan, applicants must complete a 1998-1999 FAFSA (Free Application for Federal Student Aid) form and a 1998-1999 CNU Application for Financial Aid. A separate loan application is not necessary if a lender is selected from the lender list that is provided with the CNU Application for Financial Aid. Both applications must be completed annually.

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 $25 per student.

Satisfactory Academic Progress

Students receiving financial aid must remain in good academic standing and must be making satisfactory academic progress toward the completion of the degree. For an explanation of what constitutes "good academic standing" and "satisfactory academic progress" refer to the *CNU Financial Aid Guide.*

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.

Additional Information

Students interested in receiving financial aid are strongly encouraged to obtain a copy of the *CNU Financial Aid Guide* and read it thoroughly. The guide, applications, and additional information are available from the Office of Financial Aid, Administration Building, room 201, (757) 594-7170.

Graduate Assistantships Administered by CNU Office of Graduate Studies

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 (½ 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.

Procedures

Assistantships are to be awarded from applications submitted directly to the Program Coordinators. For a graduate assistantship application contact the Office of Graduate Studies or the Program Coordinator.

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.

Christopher Newport University Board of Vistors

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Director of Career and Counseling Services
Marian D. Carrington
Director of Multicultural Student Affairs
Donna M. Eddleman
Director of Student Life
Donna Yarner
Acting Registrar
Marcia D. Boyd
Director of Financial Aid

Christopher Newport University
Graduate Faculty

This list reflects the expected status of members of the graduate faculty for 1998-99 at the time the catalog went to press.

Ex officio Members

Paul S. Trible, 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
Jouett L. Powell
Dean of the College of Liberal Arts and
Professor of Philosophy and Religious Studies
B.A., Baylor University; B.D., Southern Baptist Theological Seminary; M.Phil., Ph.D., Yale University
George R. Webb
Dean of the College of Business, Science and 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
Catherine Doyle
University Librarian and
Associate Professor of Library Science
B.A. Rutgers University, M.S.L.S., Simmons College

Director of Graduate Studies

H. Marshall Booker
Director of Graduate Studies and Professor of Economics
B.A., Lynchburg College; Ph.D., University of Virginia

Graduate Faculty in the College of Liberal Arts

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
Mary V. Bicouvaris
Associate Professor of Education, part-time
B.S., Ohio State University; M.A., The College of William and Mary; Ph.D., Old Dominion University
Sandra L. Bryan
Professor of Education
B.S., University of Georgia; M.Ed., Ed.D., Auburn University
Christina C. Ramirez-Smith
Associate Professor of Education
B.S., University of Idaho; M.S., Morgan State University; Ed.D., Boston University
Marsha M. Sprague
Associate Professor of Education
B.A., Wellesley College; M.Ed., Pennsylvania State University; Ed.D., University of Miami

English

Maureen M. Archer
Assistant Professor of English
B.A., University of Michigan, M.A. University of Chicago, Ph.D. Purdue University
Kara K. Keeling
Assistant Professor of English
B.A. Carleton College; M.A., Purdue University, Ph.D., Indiana University
Terrence O. Lee
Assistant Professor of English
B.A., M.A., Ph.D., Syracuse University
Roark R. Mulligan
Assistant Professor of English
B.A., University of California, Berkeley; M.S., M.A., Ph.D., University of Oregon
Jay S. Paul
Professor of English
B.A., Hartwick College; M.A., Ph.D. Michigan State University
Scott T. Pollard
Associate Professor of English
B.A. Santa Clara University; M.A., Ph.D., University of California, Irvine
Roberta K. Rosenberg
Professor of English
B.A., Queens College of the City University of New York, Ph.D., University of North Carolina, Chapel Hill

Fine and Performing Arts

Clyde W. Brockett, Jr.
Professor of Music
A.B., The College of William and Mary; M.A., Ph.D., Columbia University

Government and Public Affairs

Buck G. Miller
Professor of Government and Public Affairs
B.A., Gettysburg College; M.P.A., Ph.D., New York University

History

Robert M. Saunders (Provisional)
Professor of History
B.A., M.A., University of Richmond; Ph.D., University of Virginia

Philosophy and Religious Studies

John A. Hoaglund
Professor of Philosophy
B.A., University of Vienna; Ph.D., Free University of Berlin

Psychology

Thomas D. Berry
Assistant Professor of Psychology
B.S., University of Florida; M.S., Ph.D., Virginia Polytechnic Institute and State University
Diane Catanzaro
Associate Professor of Psychology
B.A., Dickinson College; M.A., Fairleigh Dickinson University; Ph.D., Old Dominion University

Lee E. Doerries
Professor of Psychology
B.A., M.A., The College of William and Mary; Ph.D., University of Rhode Island
Dorothy C. Doolittle
Professor of Psychology
B.A., University of Georgia; M.S., Ph.D., University of Tennessee, Knoxville
Sheila Parker Greenlee
Professor of Psychology
B.A., Norfolk State University; M.S., Ph.D., Ohio State University
Timothy R. Marshall
Associate Professor of Psychology
B.S., University of Idaho; M.S., Ph.D., Virginia Polytechnic Institute and State University

Graduate Faculty in the College of Business, Science and Technology

Accounting

Ronnie Cohen
Associate Professor of Accounting
B.A., Kirkland College; J.D., LL.M., The College of William and Mary
David J. Gosselin
Assistant Professor of Accounting
B.S.B.A. Indiana University; M.B.A., Ph.D., University of Arkansas

Biology, Chemistry and Environmental Science

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Assistant Professor of Biology and Chemistry,
B.Ch., M.B., Cairo University; M.S. South Dakota State University; Ph.D. Virginia Commonwealth University
Robert B. Atkinson
Assistant Professor of Biology
B.S., M.S., James Madison University; Ph.D., Virginia Polytechnic Institute and State University
C. Ken Chang
Professor of Chemistry
B.S., Taiwan University, Ph.D., University of Notre Dame
Harold N. Cones, Jr.
Professor of Biology
B.S., Maryville College; M.A., The College of William and Mary; Ph.D., Bowling Green State University
James R. Reed, Jr.
Professor of Biology
A.B., Harvard College, M.S., Cornell University; Ph.D., Tulane University
Barbara A. Savitzky
Assistant Professor of Biology
B.A., Ph.D., University of Tennessee, Knoxville
Gary J. Whiting
Associate Professor of Biology
B.S., University of Cincinnati; Ph.D. University of South Carolina

Economics and Finance

Michelle A. Vachris
Assistant Professor of Economics
B.A., College of William and Mary; M.A., Ph.D., George Mason University
Robert C. Winder
Director of Business Programs and
Associate Professor of Economics and Finance
A.B., Rutgers College; M.A., University of Connecticut; Ph.D., Rutgers University
George K. Zestos
Associate Professor of Economics
B.A., Saginaw Valley State University; M.A., Michigan State University; Ph.D., Indiana University

Management and Marketing

John E. Anderson, Jr.
Professor of Management and Marketing
B.A., University of Akron; Ph.D., Ohio State University

Mathematics

John J. Avioli
Professor of Mathematics and Computer Science
B.S., West Chester State College; M.S., Ph.D., University of Delaware
Bobbye H. Bartels
Assistant Professor of Mathematics
B.A. Lawrence University; M.A., Ph.D., University of Illinois.
Martin W. Bartelt
Professor of Mathematics
B.A., Hofstra University; M.A., Ph.D., University of Wisconsin
Brian D. Bradie
Associate Professor of Mathematics
B.S., M.S., Ph.D., Clarkson University
Hongwei Chen
Associate Professor of Mathematics
B.S., Hunan Normal University, PRC; M.S., Huazhong University of Science and Technology, PRC; Ph.D., North Carolina State University
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B.S., Arya Mehr, Sharif, University of Technology, Teheran; M.S., Michigan State University; Ph.D., University of Michigan
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A.A., Warren Wilson College; B.A., University of North Carolina, Asheville; M.A., Western Carolina University; Ed.D., University of North Carolina, Greensboro
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B.S., University of Pittsburgh; M.S. (Engineering), M.S. (Applied Mathematics), Ph.D., Brown University
Richard M. Summerville
Professor of Mathematics
B.S. Clarion State University; A.M. Washington University, St. Louis; Ph.D., Syracuse University

Nursing

Sharon K. Broscious
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B.S.N., Kutztown State University; M.S.N., Villanova University; D.S.N., University of Alabama

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Physics and Computer Science

Joshua C. Anyiwo
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B.A., M.A., Cambridge University; Ph.D., Colorado State University

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B.A., Reed College; Ph.D., University of Washington

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Associate Professor of Physics and Computer Science
B.S., M.S., Ph.D., Carnegie-Mellon University

James M. Hereford
Assistant Professor of Physics
B.S., Stanford University; M.S., Ph.D., Georgia Institute of Technology

David L. Hibler
Associate Professor of Physics and Computer Science
B.S., Ph.D., University of Texas; M.S., Ph.D., University of South Carolina

Robert F. Hodson
Associate Professor of Physics and Computer Science
B.S.E., University of Connecticut; M.S.E., University of Central Florida; Ph.D., Florida State University

Peter A. Knipp
Associate Professor of Physics and Computer Science
A.B., Princeton University; M.S., Ph.D., University of Chicago

Lynn Lambert
Associate Professor of Physics and Computer Science
B.A., Wellesley College; M.S., Shippensburg Universityof Pennsylvania; Ph.D., University of Delaware

Raouf L. Selim
Associate Professor of Physics and Computer Science
B.S.E.E., Cairo University; B.S., Ain Shams University, Cairo; M.A., Ph.D., Temple University

Antonio C. Siochi
Associate Professor of Physics and Computer Science
B.S., Anteneo de Manila University; M.S., Ph.D., Virginia Polytechnic Institute and State University

INDEX

NOTES

Application Forms

Application for Admission to Graduate Study for
Christopher Newport University Master's Degree Programs

Master of Arts in Teaching
- 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
- Instrumentation and Advanced Computer Systems
- Modeling and Simulation
- Solid State Systems

Master of Science in Applied Psychology
- Industrial/Organizational Psychology

Master of Science in Environmental Science
- General Environmental Studies

Master of Science in Nursing-Moratorium-Currently Accepting No New Students
- Nurse Case Manager Specialization

- Checklist for Application to CNU Graduate Study -

All applicants must provide the following:
___ Application for Admission to Graduate Study
___ Tuition Rate Determination Form, if applicable
___ Official Transcript from the baccalaureate institution
___ Official Transcripts from all graduate work taken at other institutions

Master of Arts in Teaching degree-seeking applicants must provide:
___ 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
___ PRAXIS I Scores for the MAT-Licensure Track or
___ Scores from the specialty test for those holding licensure.

M.S. in Applied Physics and Computer Science degree-seeking applicants must provide:
___ 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:
___ 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
___ Score from the GRE Psychology Subject Test (taken within 5 years prior to the date of admission)
___ 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:
___ 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

CHRISTOPHER NEWPORT UNIVERSITY

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.

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

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

Temporary 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 ____ 19 ____
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.** Mathematics ___ Science ___ Language Arts ___ Language Arts with Licensure ___
___ **M.S. in Applied Physics and Computer Science** Computer Science ___ Solid State Systems ___ Instrumentation and Advanced Computer Systems ___ Modeling and Simulation ___
___ **M.S. in Applied (Industrial/Organizational) Psychology**
___ **M.S. in Environmental Science**

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.

CHRISTOPHER NEWPORT UNIVERSITY

Professional Information

Your Current Employer _____
Name City State

Dates of Employment _____ Current Position Title _____

Are you currently certified by the Commonwealth of Virginia to teach in Virginia? Yes _____ No _____

Teaching Endorsement Area(s) _____

Academic Information

List the college where you earned your bachelor's degree and colleges awarding graduate credit, beginning with the most recent college. *Indicate the undergraduate institution by U and graduate by G.*

FAILURE TO LIST THE COLLEGES REQUIRED WILL RESULT IN CANCELLATION OF YOUR ADMISSION TO THE UNIVERSITY AND OF YOUR REGISTRATION IN CLASS.

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, been administratively withdrawn for academic reasons, or otherwise been declared 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 (Mo./Yr.)	Plan to take Test (Mo./Yr.)
Graduate Record Examination (GRE)		
GRE Psychology Subject Test		
PRAXIS		
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 Application Fee Form but do not remove.

APPLICATION FEE FORM

_____ _____
Name of Applicant (Last name, first name, middle initial) Social Security Number

Application for: Fall ___ Spring ___Summer___ 19 __ Daytime Telephone Number _____

Payment of the non-refundable $40.00 Degree seeking fee: Check ___ Money Order ___ Credit Card ___

_____ _____
VISA or MasterCard Account Number Card Expiration Date

_____ _____
Cardholder name (please print) Cardholder signature

CHRISTOPHER NEWPORT UNIVERSITY

TUITION RATE DETERMINATION FORM

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 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 __
   Expiration Date : ____/____/____
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 $9,500.00 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 __

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 12 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? Yes __ No __
   Registration Date: ____/____/____
   b. held a valid Virginia Driver's License?
   Expiration Date ____/____/____
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 $9,500.00 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 $9,500.00 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

CHRISTOPHER NEWPORT UNIVERSITY

LETTER OF RECOMMENDATION FOR GRADUATE STUDY

SECTION 1 (to be completed by applicant)
The following information must correspond to the information submitted on the Application for Admission to Graduate Studies. 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 with 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 name

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. Students, 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 recommendation form 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 assistance or fellowships.

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

____ Highly recommended ____ Recommend with reservations

____ 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.

CHRISTOPHER NEWPORT UNIVERSITY

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

CHRISTOPHER NEWPORT UNIVERSITY

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Name _____
Last Name First Name Middle/Former Name

Social Security Number ___ ___ ___ - ___ ___ - ___ ___ ___ ___

Date of Attendance _____ Date of Birth _____

_____ _____
Student Signature Date

Telephone Numbers

Admissions Office		(757) 594-7015
Admissions Office Toll-free		(800) 333-4CNU
Admissions Office FAX		(757) 594-7333
Alumni Relations Office		(757) 594-7712
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) 594-7174
Disability Support Services		(757) 594-8850
Disability Support Services	TDD	(757) 594-7938
The 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
Information		(757) 594-7100
Library Information		(757) 594-7133
Multicultural Student Affairs Office		(757) 594-7335
President's Office		(757) 594-7002
Provost's Office		(757) 594-7050
Registrar/Student Records		(757) 594-7155
Student Accounts		(757) 594-7195
Program Coordinators:		
MAT		(757) 594-7973
M.S. in Applied Physics & Computer Sc.		(757) 594-7360
M.S. in Applied Psychology.		(757) 594-7948
M.S. in Environmental Science.		(757) 594-7307
M.S. in Nursing.		(757) 594-7615
Residence Hall Information Desk		(757) 594-7669
Theatre Tickets (Box Office)		(757) 594-7852
University Police		(757) 594-7053
Veterans Affairs Office		(757) 594-7175

Internet address: http://www.cnu.edu