CHRISTOPHER NEWPORT
UNIVERSITY

GRADUATE CATALOG 2005-2006

CHRISTOPHER NEWPORT UNIVERSITY

GRADUATE CATALOG

2005-2006

STUDENTS FIRST • LIBERAL LEARNING • OUTSTANDING TEACHING • ACCESS AND OPPORTUNITY • LEADERSHIP IN COMMUNITY AND COMMONWEALTH.

1 University Place
Office of Graduate Studies
Gosnold Hall, Room 220 A
Newport News, VA 23606

www.cnu.edu/gradstudies

Dear Student,

The pages that follow describe our traditional Graduate Programs and the Five Year Bachelor to Master's Programs. You'll learn of the admission requirements, the program requirements and what the courses offer. We also have included the academic policies and procedures which will make your graduate student days run more smoothly.

What we cannot show you on these pages are the qualified and enthusiastic faculty who will instruct you, the excitement of discussing and comparing ideas, the sense of accomplishment you will have as you successfully complete the challenging courses, the satisfaction of reviewing the results of your first research project and the sense of community you will feel at CNU!

The Office of Graduate Studies, the academic and professional faculty and the staff are pleased that you have selected CNU to continue your professional, personal and career growth. Your education is our first priority! We expect you to do your best and you can expect the best from us.

Sincerely,

Dr. Dorothy C. Doolittle
Associate Provost for Research and Graduate Studies

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

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

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

The 2005-2006 Graduate Catalog was published by the Office of University Relations at Christopher Newport University.

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CHRISTOPHER NEWPORT UNIVERSITY

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

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

Mission of Christopher Newport University

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

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

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

Mission of Graduate Studies

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

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

Organization of the University

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

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

Organization of the Academic Year

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

Accreditation

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

Location

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

Student Services

The University's student services and facilities are available to all students and are described fully in the *2005-2006 Christopher Newport University Undergraduate Catalog* and at www.cnu.edu/studlife.

Services for Students with Disabilities

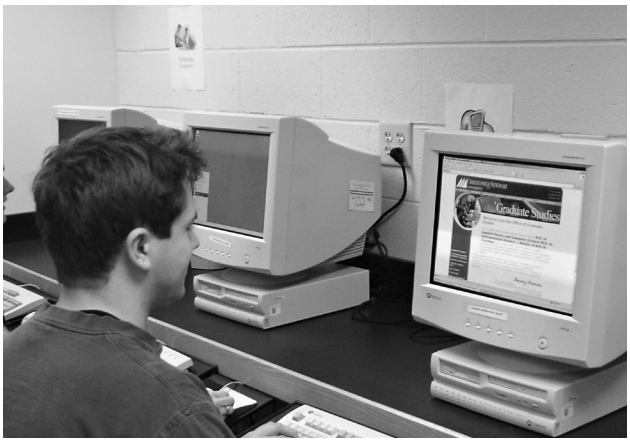
CNU provides reasonable accommodations to make education accessible to students with disabilities. The Academic Advising Center (AAC) assists students with disabilities by understanding the individual student's needs and providing support to help the student achieve academic goals. The aim of Services for Students with Disabilities is to provide students with disabilities equal access to the programs, opportunities and benefits of the University. Students with disabilities may consult with the Coordinator before or during their active enrollment at CNU. New students will want to contact the Coordinator well before beginning their first semester, if special services will be required. While consultation with the Coordinator is

always available, students who request accommodation by the University must formally declare their disability by completing a form obtained from the AAC.

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

Academic Advising Center
Coordinator for Students with Disabilities
Christopher Newport University
1 University Place
Newport News, VA 23606-2998

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


Graduate Studies

Graduate Studies

Master of Arts in Teaching

This master's program is designed for students who wish to become licensed teachers. A combination of course work and field experiences prepare students with competencies necessary to enter the teaching profession. At the conclusion of the program, students receive a license to teach in the Commonwealth of Virginia.

Master of Science in Applied Physics and Computer Science

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

Master of Science in 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.


A B C

Master of Arts in Teaching

The Master of Arts in Teaching is designed for those candidates who desire to become effective classroom teachers. This program offers graduate students the latest advancements in content area teaching through hands-on activities, discussion and field experiences.

All students study instructional practices which are based on evidence provided by educational research. In addition, an emphasis is placed on the study of diversity in the United States and implications of that diversity for educational practice.

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

ART	**PK - 12**
BIOLOGY	**6 - 12**
COMPUTER SCIENCE	**6 - 12**
ELEMENTARY	**PK - 6**
ENGLISH	**6 - 12**
FRENCH	**PK - 12**
HISTORY & SOCIAL SCIENCE	**6 - 12**
MATHEMATICS	**6 - 12**
MUSIC (CHORAL OR INSTRUMENTAL)	**PK - 12**
PHYSICS	**6 - 12**
SPANISH	**PK - 12**
THEATER	**PK - 12**

Upon completion of the program, students are recommended for licensure through the Virginia Department of Education to teach in the Commonwealth of Virginia. Students may enroll on a part-time or a full-time basis. Teachers may wish to take advantage of the many evening and summer graduate course offerings for re-licensure or continued professional development.

Dr. Marsha Sprague
Director, Teacher Preparation
Graduate Program Coordinator
msprague@cnu.edu
124 Ratcliffe Hall
(757) 594-7388

Master of Arts in Teaching

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

The Teacher Preparation Program Curriculum

The Teacher Preparation Program curriculum includes education and content courses to provide opportunities to learn teaching methods appropriate to the endorsement area. A student teaching experience, with portfolio documentation, serves as the culminating event.The Teacher Preparation Program offers three curriculum options:

Master of Arts in Teaching with Licensure

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

Licensure Only

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

Five Year Combined Bachelor's Degree and Master of Arts in Teaching Degree

Undergraduate CNU students may apply in the spring of their junior year to the five-year MAT program. The curriculum for the endorsement areas are shown on pages titled *Course Plan for MAT Five Year Program with Licensure*.

Admission Requirements

Master of Arts in Teaching with Licensure

1. A baccalaureate degree from a regionally accredited college or university with a minimum grade point average (GPA) of 3.00 on a 4.00 scale;
2. An official transcript from the baccalaureate institution, 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. PRAXIS I test results which show a minimum composite score of 532 from the Reading, Writing and Mathematics subtests;
5. A one-page typed essay describing the applicant's purpose and strengths for entering the teaching profession.

Licensure Only

1. A baccalaureate degree from a regionally accredited college or university with a minimum grade point average of 2.70 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. PRAXIS I test results which show a minimum composite score of 532 from the Reading, Writing and Mathematics subtests;
5. A one-page typed essay describing the applicant's purpose and strengths for entering the teaching profession.

Five-Year Combined Bachelor's Degree and Master of Arts in Teaching

1. Application must be submitted by February 1st of the junior year with a minimum GPA of 3.00;
2. An unofficial transcript from CNU for coursework to date;
3. Two letters of recommendation with at least one from a CNU professor;
4. PRAXIS I test results which show a minimum composite score of 532 from the Reading, Writing and Mathematics subtests, **OR**
   SAT score of 1100 with at least 530 in Verbal and Math;
5. A one-page typed essay describing the applicant's purpose and strengths for entering the teaching profession.

The ***Application for Admission to 5 Year Graduate Study Program*** is distributed by the Graduate Program Coordinator.

Teachers for Re-licensure or Professional Development

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

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. A copy of the official transcript from the baccalaureate institution; official transcript not required

Non Degree Students Not Enrolled in a Program

Individual courses in the curriculum may be taken by students not pursuing an advanced degree at the University by entering as a non-degree student.

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 with the degree posted.

Changing from Non-degree Status to Degree-seeking Status

A non-degree student may apply to change to degree-seeking status. To do so, the student must submit the form ***Request for Status Change to Degree-seeking Status*** and supply the documentation listed above in Admissions Requirements for the Master of Arts in Teaching with Licensure section.

Goals of the Master of Arts in Teaching Preparation Program

The following are the goals of the Teacher Preparation Program for a program completer:

1. Have a firm base of knowledge in the academic subjects they teach, including state and national standards for those subjects.
2. Have the pedagogical skills to teach subject matter in an interactive and engaging manner.
3. Understand and meet the needs of individual and diverse learners.
4. Organize learning environments to achieve optimal learning conditions appropriate to student age level.
5. Utilize technology effective in an instructional program.
6. Understand and appreciate the historical, sociological, and legal foundations of education.
7. Promote students' acquisition and use of literacy tools in reading, writing and mathematics.
8. Demonstrate skills in the assessment of student performance and make appropriate decisions based on that assessment.
9. Engage in reflective decision making.
10. Approach work collaboratively with colleagues, families and communities.

Program Completion Requirements

The student receiving the MAT degree and/or recommendation for state licensure must accomplish all of the following:

- 3.0 GPA in graduate course work with no more than two grades of ***C*** on the graduate transcript
- Passing scores on the appropriate PRAXIS II exam
- An acceptable portfolio evaluated by a University supervisor

Graduate Assistantships

Graduate assistants are employed to perform research and/or administrative activities as directed by graduate faculty within the department. The position requires a weekly time commitment and is awarded on a competitive basis. To qualify, a student must be a degree-seeking student with no limits or provisions, and enrolled in six to nine graduate credit hours in the semester of the award. Refer to page 119 for more information.

COURSE PLAN FOR MAT WITH LICENSURE
ALREADY DEGREED
ART PK - 12

GRADUATE COURSE REQUIREMENTS

ENGL 514	Advanced Children's Literature	3
PHIL 521	Critical Thinking	3
FNAR 534	Theory and Practice of Art Education	3

PROFESSIONAL YEAR - SUMMER

TCHG 516 m/s	Curriculum and Instruction	3
TCHG 543	Classroom Management and Discipline	3
FNAR 589	Advanced Crafts	3

PROFESSIONAL YEAR - FALL

ENGL 522	Reading and Writing in Content Areas	3
PSYC 535	Exceptional Learner	3
CPSC 580	Technology for Teachers	3
150 HOURS	*Field Experience*	

PROFESSIONAL YEAR - SPRING

SOCL 501	Multiculturalism, Diversity and Education	3
TCHG 510	Internship	6

TOTAL GRADUATE COURSE HOURS 36

PREREQUISITE CONTENT COURSE AND SUPPORT REQUIREMENTS
Equivalent Courses May Be Accepted

PSYC 210 & 211	Human Growth and Behavior I and II **OR**	6
PSYC 307	Developmental Psychology	3
SOCL 314	Education, Culture and Society	3
PSYC 312	Educational Psychology	3
FNAR 201G	Introduction to the Arts I	3
FNAR 202G	Introduction to the Arts II	3
FNAR 218	Basic Design and Drawing	3
FNAR 219	Basic Two & Three Dimensional Design	3
FNAR 231	Fundamentals of Painting	3
FNAR 241	Ceramics	3
FNAR 251	Sculpture	3
FNAR 252	Printmaking	3
FNAR 321	Basic Drawing **OR**	3
FNAR 322	Theory and Practice of Drawing	3
FNAR 389	Crafts	3
9 CREDITS	Upper-level Art History Electives	9

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

GRADUATE COURSE REQUIREMENTS

SENIOR YEAR

ENGL 514	Advanced Children's Literature	3
PHIL 521	Critical Thinking	3
FNAR 534	Theory and Practice of Art Education	3

FIFTH YEAR - SUMMER

TCHG 516m/s	Curriculum and Instruction	3
TCHG 543	Classroom Management and Discipline	3
FNAR 589	Advanced Crafts	3

FIFTH YEAR - FALL

ENGL 522	Teaching Reading and Writing	3
PSYC 535	Exceptional Learner	3
CPSC 580	Technology for Teachers	3
150 HOURS	*Field Experience*	

FIFTH YEAR - SPRING

SOCL 501	Multiculturalism, Diversity & Education	3
TCHG 510	Internship	6
	TOTAL GRADUATE COURSE HOURS	36

Undergraduate Content and Support Course Requirements

MATH 125	Statistics	3
COMM 201	Public Speaking	3
PSYC 210	Human Growth and Behavior	3
PSYC 211	Human Growth and Behavior II	3
PSYC 312	Educational Psychology	3
SOCL 314	Education, Culture and Society	3
FNAR 201G	Introduction to the Arts I	3
FNAR 202G	Introduction to the Arts II	3
FNAR 218	Basic Drawing and Design	3
FNAR 219	Basic Two & Three Dimensional Design	3
FNAR 231	Fundamentals of Painting	3
FNAR 241	Ceramics I	3
FNAR 251	Sculpture I	3
FNAR 252	Printmaking	3
FNAR 321	Basic Drawing **OR**	3
FNAR 322	Theory and Practice of Drawing	3
FNAR 389	Crafts	3
FNAR 490	Capstone	Credits Vary
9 CREDITS	Upper Level Art History Electives	9
MUSC 207G or 208G	The World's Music	3
THEA 210G or 211G	Introduction to World Drama	3

COURSE PLAN FOR LICENSURE ONLY
ALREADY DEGREED
ART PK - 12

GRADUATE COURSE REQUIREMENTS

PROFESSIONAL YEAR: SUMMER

TCHG 516m/s	Curriculum and Instruction	3
TCHG 543	Classroom Management and Discipline	3

PROFESSIONAL YEAR: FALL

FNAR 534	Theory and Practice of Art Education	3
ENGL 522	Reading & Writing in Content Areas	3
PSYC 535	Exceptional Learner	3
CPSC 580	Technology for Teachers	3
150 HOURS	*Field Experience*	

PROFESSIONAL YEAR: SPRING

TCHG 510	Internship	6

PREREQUISITE CONTENT COURSE AND SUPPORT REQUIREMENTS
Equivalent Courses May Be Accepted

PSYC 210 & 211	Human Growth and Behavior I and II **OR**	6
PSYC 307	Developmental Psychology	3
SOCL 314	Education, Culture and Society	3
PSYC 312	Educational Psychology	3
FNAR 201G	Introduction to the Arts I	3
FNAR 202G	Introduction to the Arts II	3
FNAR 218	Basic Design and Drawing	3
FNAR 219	Basic Two & Three Dimensional Design	3
FNAR 231	Fundamentals of Painting	3
FNAR 241	Ceramics	3
FNAR 251	Sculpture	3
FNAR 252	Printmaking	3
FNAR 321	Basic Drawing **OR**	3
FNAR 322	Theory and Practice of Drawing	3
FNAR 389	Crafts	3
9 CREDITS	Upper-level Art History Electives	9

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

GRADUATE COURSE REQUIREMENTS

8 HOURS FROM THE FOLLOWING ELECTIVES:

ENVS 518	Biological Conversation: Theory & Practice	4
ENVS 522	Summer Field Studies	2
ENVS 530	Biogeography	3
ENVS 532	Wetlands Ecology	4
ENVS 536	Terrestrial Ecology	4
ENVS 540	Environmental Microbiology	4
ENVS 550	Global Change	3
ENVS 595	Topical Seminars in Environmental Science	1 - 4

PROFESSIONAL YEAR - SUMMER

TCHG 516 m/s	Curriculum and Instruction	3
TCHG 543	Classroom Management and Discipline	3
ENVS 538	Apprenticeship in Teaching Biology	3

PROFESSIONAL YEAR - FALL

ENGL 522	Reading and Writing in Content Areas	3
PSYC 535	Exceptional Learner	3
CPSC 580	Technology for Teachers	3
150 HOURS	*Field Experience*	

PROFESSIONAL YEAR - SPRING

SOCL 501	Multiculturalism, Diversity and Education	3
TCHG 510	Internship	6

TOTAL GRADUATE COURSE HOURS 36

PREREQUISITE CONTENT COURSE AND SUPPORT REQUIREMENTS
Equivalent Courses May Be Accepted

PSYC 210 & 211	Human Growth and Behavior I and II	**OR**	6
PSYC 307	Developmental Psychology		3
SOCL 314	Education, Culture and Society		3
PSYC 312	Educational Psychology		3
BIOL 107	General Biology		3
BIOL 108	General Biology II		3
BIOL 109	General Biology lab		1
BIOL 300W	General Biology III for majors		3

(Continued on following page)

Choose one of the following:

BIOL 305	Plant Anatomy	4
BIOL 308 & 308L	Plant Physiology and Lab	4
BIOL 310	Morphology & Phylogeny of Plants	4
BIOL 321 & 322	Plant Taxonomy I & II	4

Choose one of the following:

BIOL 309	Vertebrate Embryology	4
BIOL 312	Invertebrate Zoology	4
BIOL 320 & 320L	Natural History of Vertebrates	4
BIOL 409	Comparative Anatomy of Vertebrates	4
BIOL 418 & 418L	Animal Behavior & Lab	4
BIOL 440	Herpetology	4
BIOL 313	Genetics	3

Upper Level Biology Courses:

BIOL 307	Cell Biology **OR**	
BIOL 414 & 414L	Introductory Biochemistry & Lab	4
BIOL 314 & 314L	Human Anatomy and Physiology I	4
BIOL 407 & 407L	General Ecology	4
BIOL 491	Biology Seminar	1
6 CREDITS	Upper-level Biology Electives	6

Support Courses:

CHEM 121 & 121L	General Chemistry & Lab	5
CHEM 122 & 122L	General Chemistry & Lab	5
CHEM 321 & 321L	Organic Chemistry & Lab	5
CHEM 322 & 322L	Organic Chemistry & Lab	5
PHYS 151 & 151L	Elementary Physics & Lab * **Preferred**	4
PHYS 152 & 152L	Elementary Physics & Lab	4
OR		
PHYS 201 & 201L	General Physics & Lab	4
PHYS 202 & 202L	General Physics & Lab	4
MATH 125 & 130 or higher	Mathematics Electives	6

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

GRADUATE COURSE REQUIREMENTS

SENIOR YEAR

8 Hours from the following electives:

ENVS 518	Biological Conservation: Theory & Practice	4
ENVS 522	Summer Field Studies	2
ENVS 530	Biogeography	3
ENVS 532	Wetlands Ecology	4
ENVS 536	Terrestrial Ecology	4
ENVS 540	Environmental Microbiology	4
ENVS 550	Global Change	3
ENVS 595	Topical Seminars in Environmental Science	1-4

FIFTH YEAR: SUMMER

TCHG 516m/s	Curriculum and Instruction	3
TCHG 543	Classroom Management & Discipline	3
ENVS 538	Apprenticeship in Teaching Biology	4

FIFTH YEAR: FALL

ENGL 522	Reading & Writing in Content Areas	3
PSYC 535	Exceptional Learner	3
CPSC 580	Technology for Teacher	3
150 HOURS	*Field Experience*	

FIFTH YEAR: SPRING

SOC 501	Multiculturalism, Diversity & Education	3
TCHG 510	Internship	6
	TOTAL GRADUATE COURSE HOURS	36

Undergraduate Content and Support Course Requirements

MATH 125	Statistics	3
COMM 201	Public Speaking	3
PSYC 210	Human Growth and Behavior I	3
PSYC 211	Human Growth and Behavior II	3
PSYC 312	Educational Psychology (Field Work Required)	3
SOCL 314	Education, Culture and Society (Field Work Required)	3
BIOL 107, 108, 109L	General Biology I and II and Lab	7
BIOL 300W	General Biology III	3
BIOL 313	Genetics	3
BIOL 307	Cell Biology **OR**	4
BIOL 414, 414L	Biochemistry	4
BIOL 491	Biology Seminar	1

(Continued on the following page)

Choose one of the following:

BIOL 305	Plant Anatomy	4
BIOL 308, 308L	Plant Physiology	4
BIOL 310	Morphology & Phylogeny of Plants	4
BIOL 321, 322	Plant Taxonomy	4

Choose one of the following:

BIOL 309	Vertebrate Embryology	4
BIOL 312	Invertebrate Zoology	4
BIOL 320, 320L	Natural History of Vertebrates	3 or 4
BIOL 409	Comparative Anatomy of Vertebrates	4
BIOL 418, 418L	Animal Behavior	3 or 4
BIOL 440	Herpetology	4

Upper Level Biology Courses:

BIOL 314, 314L	Human Anatomy & Physiology 1	4
BIOL 407, 407L	General Ecology	4
6 CREDITS	Upper-level Biology Electives	6

Support Courses:

CHEM 121, 121L, 122, 122L	General Chemistry	10
CHEM 321, 321L, 322, 322L	Organic Chemistry	10

Choose from one of the following:

PHYS 151, 151L, 152, 152L	Elementary Physics * **Preferred**	8
OR		
PHYS 201, 201L, 202, 202L	General Physics	8
MATH 125 & 130 or higher	Mathematics Electives	6

COURSE PLAN FOR LICENSURE ONLY
ALREADY DEGREED
BIOLOGY 6 - 12

GRADUATE COURSE REQUIREMENTS

PROFESSIONAL YEAR: SUMMER

TCHG 516m/s	Curriculum and Instruction	3
TCHG 543	Classroom Management and Discipline	3

PROFESSIONAL YEAR: FALL

ENGL 522	Reading & Writing in Content Areas	3
PSYC 535	Exceptional Learner	3
CPSC 580	Technology for Teachers	3
150 HOURS	*Field Experience*	

PROFESSIONAL YEAR: SPRING

TCHG 510	Internship	6

PREREQUISITE CONTENT COURSE AND SUPPORT REQUIREMENTS
Equivalent Courses May Be Accepted

PSYC 210 & 211	Human Growth and Behavior I and II **OR**	**6**
PSYC 307	Developmental Psychology	3
SOCL 314	Education, Culture and Society	3
PSYC 312	Educational Psychology	3
BIOL 107	General Biology	3
BIOL 108	General Biology II	3
BIOL 109	General Biology lab	1
BIOL 300W	General Biology III for majors	3
BIOL 313	Genetics	3
BIOL 307	Cell Biology **OR**	
BIOL 414 & 414L	Introductory Biochemistry and Lab	4

Choose one of the following:

BIOL 305	Plant Anatomy	4
BIOL 308 & 308L	Plant Physiology and Lab	4
BIOL 310	Morphology & Phylogeny of Plants	4
BIOL 321 & 322	Plant Taxonomy I & II	4

Choose one of the following:

BIOL 309	Vertebrate Embryology	4
BIOL 312	Invertebrate Zoology	4
BIOL 320 & 320L	Natural History of Vertebrates	4
BIOL 409	Comparative Anatomy of Vertebrates	4
BIOL 418 & 418L	Animal Behavior & Lab	4
BIOL 440	Herpetology	4

(Continued on following page)

Upper Level Biology Courses:

BIOL 314 & 314L	Human Anatomy and Physiology I	4
BIOL 407 & 407L	General Ecology	4
BIOL 491	Biology Seminar	1
6 CREDITS	Upper-level Biology electives	6

Support Courses:

CHEM 121 & 121L	General Chemistry & Lab	5
CHEM 122 & 122L	General Chemistry & Lab	5
PHYS 151 & 151L	Elementary Physics & Lab ***Preferred**	4
PHYS 152 & 152L	Elementary Physics & Lab	4
OR		
PHYS 201 & 201L	General Physics & Lab	4
PHYS 202 & 202L	General Physics & Lab	4
MATH 125 & 130 or higher	Mathematics Electives	6

COURSE PLAN FOR MAT WITH LICENSURE
ALREADY DEGREED
COMPUTER SCIENCE 6 - 12

GRADUATE COURSE REQUIREMENTS

CPSC 501	Software System Design & Implementation	3
CPSC____	500 Level Graduate Elective	3
CPSC____	500 Level Graduate Elective	3

PROFESSIONAL YEAR - SUMMER

TCHG 516 m/s	Curriculum and Instruction	3
TCHG 543	Classroom Management and Discipline	3
CPSC 502	Communications	3

PROFESSIONAL YEAR - FALL

ENGL 522	Reading and Writing in Content Areas	3
PSYC 535	Exceptional Learner	3
CPSC 580	Technology for Teachers	3
150 HOURS	*Field Experience*	

PROFESSIONAL YEAR - SPRING

SOCL 501	Multiculturalism, Diversity and Education	3
TCHG 510	Internship	6

TOTAL GRADUATE COURSE HOURS 36

PREREQUISITE CONTENT COURSE AND SUPPORT REQUIREMENTS

Equivalent Courses May Be Accepted

PSYC 210 & 211	Human Growth and Behavior I and II **OR**	6
PSYC 307	Developmental Psychology	3
SOCL 314	Education, Culture and Society	3
PSYC 312	Educational Psychology	3
MATH 140	Calculus & Analytic Geometry	4
MATH 240	Intermediate Calculus	4
MATH 235	Applied Matrix Techniques **OR**	3
MATH 260	Linear Algebra	3
ENGR 213	Discrete Structures for Computer Applications.	3
CPEN 214	Digital Logic Design	3
CPEN 371	Engineering Ethics	1
PHYS 201 & 201L	General Physics & Lab	4
PHYS 202 & 202L	General Physics & Lab	4
CPSC 225	Introduction to Computer Science	3
CPSC 230 & 230L	Computers and Programming I & Lab	4
CPSC 231 & 231L	Computers and Programming II & Lab	4
CPSC 310	Programming Language Concepts	3
CPSC 320	Data and File Structures	3
CPSC 330	Computer Organization	3
CPEN 371	Ethics	1
CPSC 410	Operating Systems I	3
CPSC 420	Algorithms	3

COURSE PLAN FOR MAT FIVE YEAR PROGRAM
WITH LICENSURE
COMPUTER SCIENCE 6-12

GRADUATE COURSE REQUIREMENTS

SENIOR YEAR

CPSC 501	Software System Design and Implementation	3
CPSC ____	Graduate Elective	3
CPSC ____	Graduate Elective	3

FIFTH YEAR: SUMMER

TCHG 516m/s	Curriculum and Instruction	3
TCHG 543	Classroom Management and Discipline	3
CPSC 502	Communications	3

FIFTH YEAR: FALL

ENGL 522	Teaching Reading and Writing	3
PSYC 535	Exceptional Learner	3
CPSC 580	Technology for Teachers	3
150 HOURS	*Field Experience*	

FIFTH YEAR: SPRING

SOCL 501	Multiculturalism, Diversity & Education	3
TCHG 510	Internship	6
	TOTAL GRADUATE COURSE HOURS	36

Undergraduate Content and Support Course Requirements

MATH 125	Statistics	3
COMM 201	Public Speaking	3
PSYC 210	Human Growth and Behavior I	3
PSYC 211	Human Growth and Behavior II	3
PSYC 312	Educational Psychology	3
SOCL 314	Education, Culture and Society	3
MATH 140	Calculus and Analytic Geometry	4
MATH 240	Intermediate Calculus	4
MATH 235	Applied Matrix Techniques **OR**	3
MATH 260	Linear Algebra	3
ENGR 213	Discrete Structures for Computer Applications	3
CPEN 214	Digital Logic Design	3
CPEN 371	Engineering Ethics	1
PHYS 201/L	General Physics and Lab	4
PHYS 202/L	General Physics and Lab	4
CPSC 225	Introduction to Computer Science	3
CPSC 230/L	Computers and Programming I and Lab	4
CPSC 231/L	Computers and Programming II and Lab	4
CPSC 310	Programming Language Concepts	3
CPSC 320	Data and File Structures	3
CPSC 330	Computer Organization	3
CPEN 371	Ethics	1
CPSC 410	Operating Systems I	3
CPSC 420	Algorithms	3

COURSE PLAN FOR LICENSURE ONLY
ALREADY DEGREED
COMPUTER SCIENCE 6 - 12

GRADUATE COURSE REQUIREMENTS

PROFESSIONAL YEAR: SUMMER

TCHG 516m/s	Curriculum and Instruction	3
TCHG 543	Classroom Management and Discipline	3

PROFESSIONAL YEAR: FALL

ENGL 522	Reading & Writing in Content Areas	3
PSYC 535	Exceptional Learner	3
CPSC 580	Technology for Teachers	3
150 HOURS	*Field Experience*	

PROFESSIONAL YEAR: SPRING

TCHG 510	Internship	6

PREREQUISITE CONTENT COURSE AND SUPPORT REQUIREMENTS
Equivalent Courses May Be Accepted

PSYC 210 & 211	Human Growth and Behavior I and II **OR**	6
PSYC 307	Developmental Psychology	3
SOCL 314	Education, Culture and Society	3
PSYC 312	Educational Psychology	3
MATH 140	Calculus & Analytic Geometry	4
MATH 240	Intermediate Calculus	4
MATH 235	Applied Matrix Techniques **OR**	3
MATH 260	Linear Algebra	3
ENGR 213	Discrete Structures for Computer Applications.	3
CPEN 214	Digital Logic Design	3
CPEN 371	Engineering Ethics	1
PHYS 201 & 201L	General Physics & Lab	4
PHYS 202 & 202L	General Physics & Lab	4
CPSC 225	Introduction to Computer Science	3
CPSC 230 & 230L	Computers and Programming I & Lab	4
CPSC 231 & 231L	Computers and Programming II & Lab	4
CPSC 310	Programming Language Concepts	3
CPSC 320	Data and File Structures	3
CPSC 330	Computer Organization	3
CPEN 371	Ethics	1
CPSC 410	Operating Systems I	3
CPSC 420	Algorithms	3

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

GRADUATE COURSE REQUIREMENTS

ENGL 532	Language Varieties in American Schools	3
MATH 570	The Teaching of Math	3
ENGL 514	Critical Reading of Children's Literature	3

PROFESSIONAL YEAR - SUMMER

TCHG 516e	Curriculum and Instruction	3
TCHG 543	Classroom Management and Discipline	3
PSYC 521	Reading Acquisition and Development	3

PROFESSIONAL YEAR - FALL

ENGL 521	Teaching Composition	3
PSYC 535	Exceptional Learner	3
CPSC 580	Technology for Teachers	3
150 HOURS	*Field Experience*	

PROFESSIONAL YEAR - SPRING

SOCL 501	Multiculturalism, Diversity and Education	3
TCHG 510	Internship	6

TOTAL GRADUATE COURSE HOURS 36

PREREQUISITE CONTENT COURSE AND SUPPORT REQUIREMENTS
Equivalent Courses May Be Accepted

(Degree in Liberal Arts or Science required)

6 CREDITS	English		6
6 CREDITS	History		6
6 CREDITS	Mathematics		6
6 CREDITS	Science		6
PSYC 210 & 211	Human Growth and Behavior I and II	**OR**	6
PSYC 307	Developmental Psychology		3
SOCL 314	Education, Culture and Society		3
PSYC 312	Educational Psychology		3
NSCI 310	Exploring Science Concepts		4
ENGL 430	Advanced English Grammar		3
GEOG 201	Introduction to Geography		3

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

GRADUATE COURSE REQUIREMENTS

SENIOR YEAR

ENGL 532	Language Varieties in American Schools	3
MATH 570	The Teaching of Math	3
ENGL 514	Critical Reading of Children's Literature	3

FIFTH YEAR - SUMMER

TCHG 516e	Curriculum and Instruction	3
PSYC 521	Reading Acquisition and Development	3
TCHG 543	Classroom Management and Discipline	3

FIFTH YEAR - FALL

ENGL 521	Teaching Composition	3
PSYC 535	Exceptional Learner	3
CPSC 580	Technology for Teachers	3
150 HOURS	*Field Experience*	

FIFTH YEAR - SPRING

SOCL 501	Multiculturalism, Diversity and Education	3
TCHG 510	Internship	6
	TOTAL GRADUATE COURSE HOURS	36

UNDERGRADUATE CONTENT AND SUPPORT COURSE REQUIREMENTS

MATH 125	Statistics	3
ENGL 101-102	Composition	3
PSYC 210 & 211	Human Growth and Behavior I & II **OR**	6
PSYC 307	Developmental Psychology	3
HIST 111	History of World Civilizations to 16th Century	3
HIST 112	History of World Civilizations since 16th Century	3
9 CREDITS	Science Sequence with Lab	9
COMM 201	Public Speaking	3
HIST 201	U. S. History	3
GEOG 201	Introduction to Geography	3
SOCL 314	Education, Culture and Society	3
PSYC 312	Educational Psychology	3
ENGL 314	Children's Literature	3
NSCI 310	Exploring Science Concepts	3
MATH 308	Processes & Procedures for Teaching Mathematics Concepts	3
ENGL 430	Advanced English Grammar	3

COURSE PLAN FOR LICENSURE ONLY
ALREADY DEGREED
ELEMENTARY PK - 6

GRADUATE COURSE REQUIREMENTS

PROFESSIONAL YEAR - SUMMER

TCHG 516 e	Curriculum and Instruction	3
TCHG 543	Classroom Management and Discipline	3
PSYC 521	Reading Acquisition and Development	3

PROFESSIONAL YEAR - FALL

ENGL 521	Teaching Composition	3
PSYC 535	Exceptional Learner	3
CPSC 580	Technology for Teachers	3
MATH 570	The Study of Math	3
150 HOURS	*Field Experience*	

PROFESSIONAL YEAR - SPRING

TCHG 510	Internship	6

PREREQUISITE CONTENT COURSE AND SUPPORT REQUIREMENTS
Equivalent Courses May Be Accepted

(Degree in Liberal Arts or Science Required)

6 CREDITS	English	6
6 CREDITS	History	6
6 CREDITS	Mathematics	6
6 CREDITS	Science	6
PSYC 210 & 211	Human Growth and Behavior I and II **OR**	6
PSYC 307	Developmental Psychology	3
SOCL 314	Education, Culture and Society	3
PSYC 312	Educational Psychology	3
NSCI 310	Exploring Science Concepts	4
ENGL 314	Children's Literature	3
ENGL 430	Advanced English Grammar	3
GEOG 201	Introduction to Geography	3

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

GRADUATE COURSE REQUIREMENTS

ENGL 532	Language Varieties in American Schools	3
ENGL 512	Multicultural Literature	3
ENGL 521	Teaching Composition	3

PROFESSIONAL YEAR - SUMMER

TCHG 516 m/s	Curriculum and Instruction	3
TCHG 543	Classroom Management and Discipline	3
ENGL 501	Teaching Literature	3

PROFESSIONAL YEAR - FALL

ENGL 522	Reading and Writing in Content Areas	3
PSYC 535	Exceptional Learner	3
CPSC 580	Technology for Teachers	3
150 HOURS	*Field Experience*	

PROFESSIONAL YEAR - SPRING

SOCL 501	Multiculturalism, Diversity and Education	3
TCHG 510	Internship	6

TOTAL GRADUATE COURSE HOURS 36

PREREQUISITE CONTENT COURSE AND SUPPORT REQUIREMENTS
Equivalent Courses May Be Accepted

PSYC 210 & 211	Human Growth and Behavior I and II **OR**	6
PSYC 307	Developmental Psychology	3
SOCL 314	Education, Culture and Society	3
PSYC 312	Educational Psychology	3
ENGL 208	Reading Literature	3
ENGL 308	Approaches to Literature	3
ENGL 309	Prose Writing	3
ENGL 311	Language and Teaching	3
ENGL 315	Adolescent Literature	3
6 CREDITS	Two (2) Courses in American Literature	6
6 CREDITS	Two (2) Courses in British Literature	6
ENGL 421	Shakespeare	3
ENGL 430	Advanced English Grammar	3
3 CREDITS	One (1) Course in World Literature	3

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

GRADUATE COURSE REQUIREMENTS

SENIOR YEAR

ENGL 512	Multicultural Literature	3
ENGL 521	Teaching Composition in Language Arts Classes	3
ENGL 532	Language Varieties in American Schools	3

FIFTH YEAR - SUMMER

TCHG 516m/s	Curriculum and Instruction	3
TCHG 543	Classroom Management and Discipline	3
ENGL 501	Teaching Literature	3

FIFTH YEAR - FALL

ENGL 522	Teaching Reading and Writing	3
PSYC 535	Exceptional Learner	3
CPSC 580	Technology for Teachers	3
150 HOURS	*Field Experience*	

FIFTH YEAR - SPRING

SOCL 501	Multiculturalism, Diversity & Education	3
TCHG 510	Internship	6
	TOTAL GRADUATE COURSE HOURS	36

Undergraduate Content and Support Course Requirements

MATH 125	Statistics	3
COMM 201	Public Speaking	3
PSYC 210	Human Growth and Behavior I	3
PSYC 211	Human Growth and Behavior II	3
PSYC 312	Educational Psychology	3
SOCL 314	Education, Culture and Society	3
ENGL 208	Reading Literature	3
ENGL 308	Approaches to Literature	3
ENGL 309	Prose Writing	3
ENGL 311	Language and Teaching	3
ENGL 315	Adolescent Literature	3

Choose one of the following three:

ENGL 341	American Literature I	3
ENGL 342	American Literature II	3
ENGL 413	History of the American Novel	3

(Continued on the following page)

Choose one of the following two:

ENGL 343	American Literature III	3
ENGL 410	Southern American Literature	3

Choose one of the following two:

ENGL 370	Early British Literature	3
ENGL 372	17th & 18th Century British Literature	3

Choose one of the following three:

ENGL 374	19th Century British Literature	3
ENGL 376	20th Century British Literature	3
ENGL 414	History of the British Novel	3

Choose one of the following four:

ENGL 321	Literature of the Ancient World	3
ENGL 322	Pre-Modern World Literature	3
ENGL 325	Contemporary World Literature	3
ENGL 425	Cultural Studies in World Literature	3

Other Support Courses:

ENGL 421	Shakespeare	3
ENGL 430	Advanced English Grammar	3
ENGL 490	Capstone	3

COURSE PLAN FOR LICENSURE ONLY
ALREADY DEGREED
ENGLISH 6 - 12

GRADUATE COURSE REQUIREMENTS

PROFESSIONAL YEAR: SUMMER

TCHG 516m/s	Curriculum and Instruction	3
TCHG 543	Classroom Management and Discipline	3

PROFESSIONAL YEAR: FALL

ENGL 522	Reading & Writing in Content Areas	3
PSYC 535	Exceptional Learner	3
CPSC 580	Technology for Teachers	3
150 HOURS	*Field Experience*	

PROFESSIONAL YEAR: SPRING

TCHG 510	Internship	6

PREREQUISITE CONTENT COURSE AND SUPPORT REQUIREMENTS
Equivalent Courses May Be Accepted

PSYC 210 & 211	Human Growth and Behavior I and II **OR**	6
PSYC 307	Developmental Psychology	3
SOCL 314	Education, Culture and Society	3
PSYC 312	Educational Psychology	3
ENGL 203	Reading Literature	3
ENGL 308	Approaches to Literature	3
ENGL 309	Prose Writing	3
ENGL 311	Language and Teaching	3
ENGL 315	Adolescent Literature	3
6 CREDITS	Two (2) Courses in American Literature	6
6 CREDITS	Two (2) Courses in British Literature	6
3 CREDITS	One (1) Course in World Literature	3
ENGL 421	Shakespeare	3
ENGL 430	Advanced English Grammar	3

COURSE PLAN FOR MAT WITH LICENSURE
ALREADY DEGREED
FRENCH PK - 12

GRADUATE COURSE REQUIREMENTS

ENGL 512	Multicultural Literature	3
PHIL 521	Critical Thinking	3
FREN 503	Advanced Writing and Stylistics	3

PROFESSIONAL YEAR - SUMMER

TCHG 516 m/s	Curriculum and Instruction	3
TCHG 543	Classroom Management and Discipline	3
FREN 538	Research in Foreign Language Teaching	3

PROFESSIONAL YEAR - FALL

ENGL 522	Reading and Writing in Content Areas	3
PSYC 535	Exceptional Learner	3
CPSC 580	Technology for Teachers	3
150 HOURS	*Field Experience*	

PROFESSIONAL YEAR - SPRING

SOCL 501	Multiculturalism, Diversity and Education	3
TCHG 510	Internship	6

TOTAL GRADUATE COURSE HOURS 36

PREREQUISITE CONTENT COURSE AND SUPPORT REQUIREMENTS
Equivalent Courses May Be Accepted

PSYC 210 & 211	Human Growth and Behavior I and II	**OR**	6
PSYC 307	Developmental Psychology		3
SOCL 314	Society, Language and Culture		3
PSYC 312	Educational Psychology		3
FREN 101	Elementary French		3
FREN 102	Elementary French		3
FREN 201	Intermediate French		3
FREN 202	Intermediate French		3
FREN 301	Grammar and Composition **OR**		
FREN 303	Advanced Grammar and Composition		3

Choose one of the following four:

FREN 302	Practical Conversations	3
FREN 304	Conversational Approach to Society and Institutions	3
FREN 306	Facets of a Changing France	3
FREN 308	Conversation via Cinema	3

(Continued on following page)

Required Courses:

FREN 310	Practical French Phonetics	3
FREN 311	French Civilization **OR**	3
FREN 312	Contemporary France	3

Three Additional Electives Required at 300-400 Level 9

FREN 351	Studies in the Pre-Modern Era	3
FREN 353	Studies in the Modern Era	3
MLAN 308	Cross-Cultural Awareness	3
MLAN 338	Teaching Languages	3

Four semesters of a language different from the one of concentration, or two semesters of a language other than the one of concentration.

LANG 101		LANG 101
LANG 102	**OR**	LANG 102
LANG 201		CLST 210
LANG 202		MLAN 205G or 206G

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

GRADUATE COURSE REQUIREMENTS

SENIOR YEAR

ENGL 512	Multicultural Literature	3
PHIL 521	Critical Thinking	3
FREN 503	Advanced Writing and Stylistics	3

FIFTH YEAR - SUMMER

TCHG 516m/s	Curriculum and Instruction	3
TCHG 543	Classroom Management and Discipline	3
FREN 538	Research in Foreign Language Teaching	3

FIFTH YEAR - FALL

ENGL 522	Teaching Reading and Writing	3
PSYC 535	Exceptional Learner	3
CPSC 580	Technology for Teachers	3
150 HOURS	*Field Experience*	

FIFTH YEAR - SPRING

SOCL 501	Multiculturalism, Diversity & Education	3
TCHG 510	Internship	6

TOTAL GRADUATE COURSE HOURS 36

Undergraduate Content and Support Course Requirements

MATH 125	Statistics	3
COMM 201	Public Speaking	3
PSYC 210	Human Growth and Behavior I	3
PSYC 211	Human Growth and Behavior II	3
PSYC 312	Educational Psychology	3
SOCL 314	Education, Culture and Society	3
FREN101	Elementary French	3
FREN 102	Elementary French	3
FREN 201	Intermediate French	3
FREN 202	Intermediate French	3
FREN 310	French Civilization	3
FREN 351	Studies in the Early Modern Era	3
FREN 352	Studies in the Modern Era	3
MLAN 308	Cross-Cultural Awareness	3
MLAN 338	Apprenticeship in Teaching Language	3

Choose one of the following two:

FREN 301	Grammar and Composition	3
FREN 303	Advanced Grammar and Composition	3

(Continued on following page)

Choose one of the following four:

FREN 302	Practical Conversations	3
FREN 304	Conversational Approach to Society and Institutions	3
FREN 306	Facets of a Changing France	3
FREN 308	Conversation via Cinema	3

Required Courses:

FREN 310	Practical French Phonetics	3
FREN 311	French Civilization **OR**	3
FREN 312	Contemporary France	3

Three Additional Electives Required at 300-400 Level 9

Four semesters of a language different from the one of concentration, or two semesters of a language other than the one of concentration, CLST 210, and either MLAN 205G or MLAN 206G.

LANG 101	LANG 201
LANG 102	LANG 202

OR

LANG 101	CLST 210
LANG 102	MLAN 205G or 206G

COURSE PLAN FOR LICENSURE ONLY
ALREADY DEGREED
FRENCH PK - 12

GRADUATE COURSE REQUIREMENTS

PROFESSIONAL YEAR: SUMMER

TCHG 516m/s	Curriculum and Instruction	3
TCHG 543	Classroom Management and Discipline	3

PROFESSIONAL YEAR: FALL

ENGL 522	Reading & Writing in Content Areas	3
PSYC 535	Exceptional Learner	3
CPSC 580	Technology for Teachers	3
150 HOURS	*Field Experience*	

PROFESSIONAL YEAR: SPRING

TCHG 510	Internship	6

PREREQUISITE CONTENT COURSE AND SUPPORT REQUIREMENTS
Equivalent Courses May Be Accepted

PSYC 210 & 211	Human Growth and Behavior I and II **OR**	6
PSYC 307	Developmental Psychology	3
SOCL 314	Society, Language and Culture	3
PSYC 312	Educational Psychology	3
FREN 101	Elementary French	3
FREN 102	Elementary French	3
FREN 201	Intermediate French	3
FREN 202	Intermediate French	3
FREN 301	Grammar and Composition **OR**	
FREN 303W	Advanced Grammar and Composition	3

Choose one of the following four:

FREN 302	Practical Conversations	3
FREN 304	Conversational Approach to Society and Institutions	3
FREN 306	Facets of a Changing France	3
FREN 308	Conversation via Cinema	3

Required Courses:

FREN 310	Practical French Phonetics	3
FREN 311	French Civilization **OR**	3
FREN 312	Contemporary France	3

(Continued on following page)

FREN 351	Studies in the Pre-Modern Era	3
FREN 352	Studies in the Modern Era	3
MLAN 308	Cross-Cultural Awareness	3
MLAN 338	Teaching Languages	3

Three Additional Electives Required at 300-400 Level 9

Four semesters of a language different from the once of concentration, or two semesters of a language other than the one of concentration.

LANG 101		LANG 101
LANG 102	**OR**	LANG 102
LANG 201		CLST 210
LANG 202		MLAN 205G or 206G

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

GRADUATE COURSE REQUIREMENTS

HIST ____	500 Level History Area I	3
HIST ____	500 Level History Area II	3
PHIL 521	Critical Thinking	3

PROFESSIONAL YEAR - SUMMER

TCHG 516 m/s	Curriculum and Instruction	3
TCHG 543	Classroom Management and Discipline	3
HIST ____	500 Level History Area III	3

PROFESSIONAL YEAR - FALL

ENGL 522	Reading and Writing in Content Areas	3
PSYC 535	Exceptional Learner	3
CPSC 580	Technology for Teachers	3
150 HOURS	*Field Experience*	

PROFESSIONAL YEAR - SPRING

SOCL 501	Multiculturalism, Diversity and Education	3
TCHG 510	Internship	6

TOTAL GRADUATE COURSE HOURS 36

PREREQUISITE CONTENT COURSE AND SUPPORT REQUIREMENTS
Equivalent Courses May Be Accepted

PSYC 210 & 211	Human Growth and Behavior I and II **OR**	6	
PSYC 307	Developmental Psychology	3	
SOCL 314	Education, Culture and Society	3	
PSYC 312	Educational Psychology	3	
HIST 111G	History of World Civilizations to the mid-16th Century	3	
HIST 112G	History of World Civilization since the mid-16th Century	3	
HIST 201	History of American Civilization to 1865	3	
HIST 202	History of American Civilization since 1865	3	
Three additional courses in History at the upper level		9	
GOVT 100	Introduction to Politics **OR**	3	
GOVT 101	Introduction to American Politics	3	
GOVT 202	State and Local Government	3	
GOVT 215	International & Comparative Politics	3	
_____	Six hours of Government at upper level	6	
ECON 201 or 202	Principles of Economics	3	(201 preferred)
GEOG 201	Introduction to Geography I	3	
GEOG 202	Introduction to Geography II	3	

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

GRADUATE COURSE REQUIREMENTS

SENIOR YEAR

HIST 500 level	Area I, History	3
HIST 500 level	Area II, History	3
PHIL 521	Critical Thinking	3

FIFTH YEAR - SUMMER

TCHG 516m/s	Curriculum and Instruction	3
TCHG 543	Classroom Management & Discipline	3
HIST 500 level	Area III, History	3

FIFTH YEAR - FALL

ENGL 522	Reading and Writing in Content Area	3
PSYC 535	Exceptional Learner	3
CPSC 580	Technology for Teachers	3
150 HOURS	*Field Experience*	

FIFTH YEAR - SPRING

SOCL 501	Multiculturalism, Diversity & Education	3
TCHG 510	Internship	6
	TOTAL GRADUATE COURSE HOURS	36

Undergraduate Content and Support Course Requirements

MATH 125	Statistics	3
COMM 201	Public Speaking	3
PSYC 210	Human Growth and Behavior I	3
PSYC 211	Human Growth and Behavior II	3
PSYC 312	Educational Psychology	3
SOCL 314	Education, Culture and Society	3
HIST 111G	History of World Civilizations to the mid -16th Century	3
HIST 112G	History of World Civilization since the mid-16th Century	3
HIST 201	History of American Civilization to 1865	3
HIST 202	History of American Civilization since 1865	3
_____	Nine additional hours in History at upper level	9
GOVT 100	Introduction to Politics **OR**	3
GOVT 101	Introduction to American Politics	3
GOVT 202	State and Local Government	3
GOVT 215	International and Comparative Politics	3
_____	Six additional hours of Government at the upper level	6
ECON 201 or 202	Principles of Economics (201 preferred)	3
GEOG 201	Introduction to Geography	3
GEOG 202	Introduction to Geography	3

COURSE PLAN FOR LICENSURE ONLY
ALREADY DEGREED
HISTORY/SOCIAL SCIENCE 6 - 12

GRADUATE COURSE REQUIREMENTS

PROFESSIONAL YEAR: SUMMER

TCHG 516m/s	Curriculum and Instruction	3
TCHG 543	Classroom Management and Discipline	3

PROFESSIONAL YEAR: FALL

ENGL 522	Reading & Writing in Content Areas	3
PSYC 535	Exceptional Learner	3
CPSC 580	Technology for Teachers	3
150 HOURS	*Field Experience*	

PROFESSIONAL YEAR: SPRING

TCHG 510	Internship	6

PREREQUISITE CONTENT COURSE AND SUPPORT REQUIREMENTS
Equivalent Courses May Be Accepted

PSYC 210 & 211	Human Growth and Behavior I and II **OR**	6	
PSYC 307	Developmental Psychology	3	
SOCL 314	Education, Culture and Society	3	
PSYC 312	Educational Psychology	3	
HIST 111G	History of World Civilizations to the mid-16th Century	3	
HIST 112G	History of World Civilization since the mid-16th Century	3	
HIST 201	History of American Civilization to 1865	3	
HIST 202	History of American Civilization since 1865	3	
Three additional courses in History at the upper level		9	
GOVT 100	Introduction to Politics **OR**	3	
GOVT 101	Introduction to American Politics	3	
GOVT 202	State and Local Government	3	
GOVT 215	International & Comparative Politics	3	
_____	Six additional hours in Government at the upper level	6	
ECON 201 or 202	Principles of Economics (if possible)	3	(201 preferred)
GEOG 201	Introduction to Geography I	3	
GEOG 202	Introduction to Geography II	3	

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

GRADUATE COURSE REQUIREMENTS

MATH 570	The Study of Mathematics	3
MATH 578	Elementary Geometry/Advanced Viewpoint	3
MATH 579	Modern Analysis	3

PROFESSIONAL YEAR - SUMMER

TCHG 516 m/s	Curriculum and Instruction	3
TCHG 543	Classroom Management and Discipline	3
MATH ____	500 Level Elective	3

PROFESSIONAL YEAR - FALL

ENGL 522	Reading and Writing in Content Areas	3
PSYC 535	Exceptional Learner	3
CPSC 580	Technology for Teachers	3
150 HOURS	*Field Experience*	

PROFESSIONAL YEAR - SPRING

SOCL 501	Multiculturalism, Diversity and Education	3
TCHG 510	Internship	6

TOTAL GRADUATE COURSE HOURS 36

PREREQUISITE CONTENT COURSE AND SUPPORT REQUIREMENTS
Equivalent Courses May Be Accepted

PSYC 210 & 211	Human Growth and Behavior I and II **OR**	6
PSYC 307	Developmental Psychology	3
SOCL 314	Education, Culture and Society	3
PSYC 312	Educational Psychology	3
MATH 140	Calculus and Analytic Geometry	3
MATH 240	Intermediate Calculus	3
MATH 250	Multivariable Calculus	3
MATH 260	Linear Algebra	3
MATH 310	Proofs and Discrete Mathematics	3
MATH 335	Applied Probability	3
MATH 370	Abstract Algebra	3
6 CREDITS	300/400 level mathematics courses	6
3 CREDITS	400 level mathematics course	3
CPSC 225	Introduction to Computer Science	3
CPSC 230 & 230L	Computers & Programming I & Lab **OR**	4
CPSC 231 & 231L	Computers & Programming II & Lab	4

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

GRADUATE COURSE REQUIREMENTS

SENIOR YEAR

MATH 570	The Study of Mathematics	3
MATH 578	Elementary Geometry/Advanced Viewpoint	3
MATH 579	Modern Analysis	3

FIFTH YEAR: SUMMER

TCHG 516m/s	Curriculum and Instruction	3
TCHG 543	Classroom Management and Discipline	3
MATH 500 level	Math Elective	3

FIFTH YEAR: FALL

ENGL 522	Reading and Writing in Content Areas	3
PSYC 535	Exceptional Learner	3
CPSC 580	Technology for Teachers	3
150 HOURS	*Field Experience*	

FIFTH YEAR: SPRING

SOCL 501	Multiculturalism, Diversity & Education	3
TCHG 510	Internship	6

TOTAL GRADUATE COURSE HOURS 36

Undergraduate Content and Support Course Requirements

MATH 125	Statistics	3
COMM 201	Public Speaking	3
PSYC 210	Human Growth and Behavior I	3
PSYC 211	Human Growth and Behavior II	3
PSYC 312	Educational Psychology	3
SOC 314	Education, Culture and Society	3
MATH 140	Calculus and Analytic Geometry	4
MATH 240	Intermediate Calculus	4
MATH 250	Multivariable Calculus	3
MATH 260	Linear Algebra	3
MATH 310	Proofs and Discrete Mathematics	3
MATH 335	Applied Probability	3
MATH 370	Abstract Algebra	3

Two required:

MATH _____	300 or 400 level required (excluding 499)	3 or 4
MATH _____	300 or 400 level required (excluding 499)	3 or 4

(Continued on following page)

One required:

MATH_____	400 level mathematics (excluding 499)	3 or 4	
CPSC 225 and	Introduction to Computer Science		3
CPSC 230/230L	Computers & Programming I (Plus Lab) **OR**		3 and 1
CPSC 231/231L	Computers & Programming II (Plus Lab)		3 and 1

Recommended for BA degree:

PHYS 201/201L	General Physics (Plus Lab)	3 and 1
PHYS 202	General Physics	3

Required for a BS degree:

PHYS 201/201L	General Physics (Plus Lab)	3 and 1
PHYS 202/202L	General Physics (Plus Lab)	3 and 1

COURSE PLAN FOR LICENSURE ONLY
ALREADY DEGREED
MATHEMATICS 6 - 12

GRADUATE COURSE REQUIREMENTS

MATH 570	The Study of Mathematics	3

PROFESSIONAL YEAR: SUMMER

TCHG 516m/s	Curriculum and Instruction	3
TCHG 543	Classroom Management and Discipline	3

PROFESSIONAL YEAR: FALL

ENGL 522	Reading & Writing in Content Areas	3
PSYC 535	Exceptional Learner	3
CPSC 580	Technology for Teachers	3
150 HOURS	*Field Experience*	

PROFESSIONAL YEAR: SPRING

TCHG 510	Internship	6

PREREQUISITE CONTENT COURSE AND SUPPORT REQUIREMENTS
MAT WITH LICENSURE MATH 6 - 12
EQUIVALENT COURSES MAY BE ACCEPTED

PSYC 210 & 211	Human Growth and Behavior I and II **OR**	6
PSYC 307	Developmental Psychology	3
SOCL 314	Education, Culture and Society	3
PSYC 312	Educational Psychology	3
MATH 140	Calculus and Analytic Geometry	3
MATH 240	Intermediate Calculus	3
MATH 250	Multivariable Calculus	3
MATH 260	Linear Algebra	3
MATH 310	Proofs and Discrete Mathematics	3
MATH 335	Applied Probability	3
MATH 370	Abstract Algebra	3
6 CREDITS	300/400 level mathematics courses	6
3 CREDITS	400 level mathematics course	3
CPSC 225	Introduction to Computer Science	3
CPSC 230 & 230L **OR**	Computers & Programming I & Lab **OR**	4
CPSC 231 & 231L	Computers & Programming II & Lab	4

COURSE PLAN FOR MAT WITH LICENSURE
ALREADY DEGREED
MUSIC - CHORAL PK - 12

GRADUATE COURSE REQUIREMENTS

MUSC 537	Music in the Elementary School	3
MUSC 520	Choral Lit and Conducting	3
MUSC 533	Applied Conducting	2
MUSC 595	Choral Seminar	2

PROFESSIONAL YEAR - SUMMER

TCHG 516 m/s	Curriculum and Instruction	3
TCHG 543	Classroom Management and Discipline	3
MUSC 590	Jazz Choir Techniques	2

PROFESSIONAL YEAR - FALL

MUSC 515	Orchestration	3
PSYC 535	Exceptional Learner	3
MUSC 534	Applied Conducting	2
MUSC 599	Ensemble	1
150 HOURS	*Field Experience*	

PROFESSIONAL YEAR - SPRING

SOCL 501	Multiculturalism, Diversity and Education	3
TCHG 510	Internship	6

TOTAL GRADUATE COURSE HOURS 36

PREREQUISITE CONTENT COURSE AND SUPPORT REQUIREMENTS
Equivalent Courses May Be Accepted

PSYC 210 & 211	Human Growth and Behavior I and II **OR**	6
PSYC 307	Developmental Psychology	3
SOCL 314	Education, Society and Society	3
PSYC 312	Educational Psychology	3

Applied Music and Ensembles

Applications MUSC 131-132, 231-232, 331-332 and 431-432 (Senior Recital)	16
Credits of a large choral ensemble	8
Non-credits of MUSC 012	8
Music 115-126 and 215-216 or four (4) semesters of Applications PIAN 130; successful completion of the piano proficiency for instrumental music education majors	4

(Continued on following page)

Music Theory and History

MUSC 209-210	Elementary Ear Training	2
MUSC 309-310	Advanced Ear Training	2
MUSC 211-212	Elementary Theory of Music	6
MUSC 311-312	Advanced Theory of Music	6
MUSC 413	Counterpoint	3
MUSC 207G & 208G	The World's Music	6
MUSC 303-304-305	History of Western Music	9
MUSC 401W	Seminar in Music Bibliography	1
MUSC 407W	Music in America	3

Music Techniques

MUSC 220	Brass Instrument Techniques	1
MUSC 230	Woodwind Instrument Techniques	1
MUSC 240	Percussion Techniques	1
MUSC 250	String Instrument Techniques	1
MUSC 302	Diction	3
MUSC 315	Music Technology	3
MUSC 392	Vocal Pedagogy	3

Conducting and Literature

MUSC 314	Principles of Choral Conducting	3

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

GRADUATE COURSE REQUIREMENTS

SENIOR YEAR

MUSC 537	Music in Elementary Schools	3
MUSC 520	Choral Lit and Conducting	3
MUSC 595	Choral Seminar	2
MUSC 533	Applied Conducting	2

FIFTH YEAR - SUMMER

TCHG 516m/s	Curriculum and Instruction	3
TCHG 543	Classroom Management and Discipline	3
MUSC 590	Jazz Choral Techniques	2

FIFTH YEAR - FALL

MUSC 515	Orchestration	3
PSYC 535	Exceptional Learner	3
MUSC 534	Applied Conducting	2
MUSC 599	Ensemble	1
150 HOURS	*Field Experience*	

FIFTH YEAR - SPRING

SOCL 501	Multiculturalism, Diversity & Education	3
TCHG 510	Internship	6

TOTAL GRADUATE COURSE HOURS 36

Undergraduate Content and Support Course Requirements

MATH 125	Statistics	3
COMM 201	Public Speaking	3
PSYC 210	Human Growth and Behavior	3
PSYC 211	Human Growth and Behavior II	3
PSYC 312	Educational Psychology	3
SOCL 314	Education, Culture and Society	3

Applied Music and Ensembles

Applications MUSC 131-132, 231-232, 331-332 and 431-432 (Senior Recital)	16
Credits of a large choral ensemble	8
Non-credits of MUSC 012	8
MUSC 115-116 and 215-216 or four (4) semesters of Applications PIAN 130; successful completion of the piano proficiency for Instrumental music education majors	4

(Continued on following page)

Music Theory and History

MUSC 209-210	Elementary Ear Training	
MUSC 309-310	Advanced Ear Training	4
MUSC 211-212	Elementary Theory of Music	
MUSC 311-312	Advanced Theory of Music	15
MUSC 413	Counterpoint	
MUSC 207G-208G	The World's Music	
MUSC 303, 304,305	History of Western Music	19
MUSC 401W	Seminar in Music Bibliography	
MUSC 407W	Music in America	

Music Techniques

MUSC 220	Brass Instrument Techniques	1
MUSC 230	Woodwind Instrument Techniques	1
MUSC 240	Percussion Techniques	1
MUSC 250	String Instrument Techniques	1
MUSC 302	Diction	3
MUSC 315	Music Technology	3
MUSC 392	Vocal Pedagogy	3

Conducting and Literature

MUSC 314	Principles of Choral Conducting	3

COURSE PLAN FOR LICENSURE ONLY
ALREADY DEGREED
MUSIC - CHORAL PK - 12

GRADUATE COURSE REQUIREMENTS

PROFESSIONAL YEAR: SUMMER

TCHG 516m/s	Curriculum and Instruction	3
TCHG 543	Classroom Management and Discipline	3

PROFESSIONAL YEAR: FALL

CPSC 580	Technology for Teachers	3
ENGL 522	Reading and Writing in Content Areas	3
PSYC 535	Exceptional Learner	3
150 HOURS	*Field Experience*	

PROFESSIONAL YEAR: SPRING

TCHG 510	Internship	6

PREREQUISITE CONTENT COURSE AND SUPPORT REQUIREMENTS
Equivalent Courses May Be Accepted

PSYC 210 & 211	Human Growth and Behavior I and II **OR**	6
PSYC 307	Developmental Psychology	3
SOCL 314	Education, Society and Society	3
PSYC 312	Educational Psychology	3

Applied Music and Ensembles

Applications MUSC 131-132, 231-232, 331-332 and 431-432 (Senior Recital)	16
Credits of a large choral ensemble	8
Non-Credits of MUSC 012	8
MUSC 115-116 and 215-216 or four(4) semesters of Applications PIAN 130; successful completion of the piano proficiency for instrumental music education majors	4

Music Theory and History

MUSC 209-210	Elementary Ear Training	2
MUSC 309-310	Advanced Ear Training	2
MUSC 211-212	Elementary Theory of Music	6
MUSC 311-312	Advanced Theory of Music	6
MUSC 413	Counterpoint	3
MUSC 207G & 208G	The World's Music	6
MUSC 303-304 & 305	History of Western Music	9
MUSC 401W	Seminar in Music Bibliography	1
MUSC 407W	Music in America	3

Music Techniques

MUSC 220	Brass Instrument Techniques	1
MUSC 230	Woodwind Instrument Techniques	1
MUSC 240	Percussion Techniques	1
MUSC 250	String Instrument Techniques	1
MUSC 302	Diction	3
MUSC 315	Music Technology	3
MUSC 392	Vocal Pedagogy	3

Conducting and Literature

MUSC 314	Principles of Choral Conducting	3
MUSC 337	Music in Elementary Schools	3

COURSE PLAN FOR MAT WITH LICENSURE
ALREADY DEGREED
MUSIC - INSTRUMENTAL PK - 12

GRADUATE COURSE REQUIREMENTS

MUSC 537	Music in the Elementary School	3
MUSC 530/540	Wind/Orches Lit & Conducting	3
MUSC 570	Marching Band Techniques	2
Applications COND 533	Applied Conducting	2

PROFESSIONAL YEAR - SUMMER

TCHG 516 m/s	Curriculum and Instruction	3
TCHG 543	Classroom Management and Discipline	3
MUSC 580	Jazz Techniques	2

PROFESSIONAL YEAR - FALL

MUSC 515	Orchestration	3
PSYC 535	Exceptional Learner	3
Applications COND 534	Applied Conducting	2
MUSC 599	Ensemble	1
150 HOURS	*Field Experience*	

PROFESSIONAL YEAR - SPRING

SOCL 501	Multiculturalism, Diversity and Education	3
TCHG 510	Internship	6

TOTAL GRADUATE COURSE HOURS 36

PREREQUISITE CONTENT COURSE AND SUPPORT REQUIREMENTS
Equivalent Courses May Be Accepted

PSYC 210 & 211	Human Growth and Behavior I and II **OR**	6
PSYC 307	Developmental Psychology	3
SOCL 314	Education, Culture and Society	3
PSYC 312	Educational Psychology	3

Applied Music and Ensembles

Applications MUSC 131-132, 231-232, 331-332 and 431-432 (Senior Recital)	16
Credits of Band and/or Orchestra	8
Non-Credits of MUSC 012	8
MUSC 115-116 and 215-216 or four (4) semesters of Applications PIAN 130; successful completion of the piano proficiency for instrumental music education majors	4

(Continued on following page)

Music Theory and History

MUSC 209-210	Ear Training	2
MUSC 309-310	Ear Training	2
MUSC 211-212	Elementary Theory of Music	3
MUSC 311-312	Advanced Theory of Music	3
MUSC 413	Counterpoint	3
MUSC 207G & 208G	The World's Music I and II	6
MUSC 303-304-305	History of Western Music	9
MUSC 401W	Seminar in Music Bibliography	1
MUSC 407W	Music in America	3

Music Techniques

MUSC 220	Brass Instrument Techniques	1
MUSC 230	Woodwind Instrument Techniques	1
MUSC 240	Percussion Techniques	1
MUSC 250	String Instrument Techniques	1
MUSC 260	Voice Techniques	3
MUSC 315	Music Technology	3

Conducting and Literature

MUSC 316	Principles of Instrumental Conducting	3

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

GRADUATE COURSE REQUIREMENTS

SENIOR YEAR

MUSC 537	Music in Elementary Schools	3
MUSC 530/540	Wind Orchestra Lit & Conducting	3
MUSC 570	Marching Band Techniques	2
Applications COND 533	Applied Conducting	2

FIFTH YEAR - SUMMER

TCHG 516m/s	Curriculum and Instruction	3
TCHG 543	Classroom Management and Discipline	3
MUSC 580	Jazz Techniques	2

FIFTH YEAR - FALL

MUSC 515	Orchestration	3
PSYC 535	Exceptional Learner	3
Applications COND 534	Applied Conducting	2
MUSC 599	Ensemble	1
150 HOURS	*Field Experience*	

FIFTH YEAR - SPRING

SOCL 501	Multiculturalism, Diversity & Education	3
TCHG 510	Internship	6
	TOTAL GRADUATE COURSE HOURS	36

Undergraduate Content and Support Course Requirements

MATH 125	Statistics	3
COMM 201	Public Speaking	3
PSYC 210	Human Growth and Behavior	3
PSYC 211	Human Growth and Behavior II	3
PSYC 312	Educational Psychology	3
SOCL 314	Education, Culture and Society	3

Applied Music and Ensembles

Applications MUSC 131-132, 231-232, 331-332 and 431-432 (Senior Recital)	16
Credits of band and/or orchestra	8
Non-credits of MUSC 012	8
MUSC 115-116 and 215-216 **OR** four (4) semesters of Applications PIAN 130; successful completion of the piano proficiency for Instrumental music education majors	4

Continued on following page)

Music Theory and History

MUSC 209-210	Elementary Ear Training	
MUSC 309-310	Advanced Ear Training	4
MUSC 211-212	Elementary Theory of Music	
MUSC 311-312	Advanced Theory of Music	15
MUSC 413	Counterpoint	
MUSC 207G-208G	The World's Music	
MUSC 303, 304,305	History of Western Music	19
MUSC 401W	Seminar in Music Bibliography	
MUSC 407W	Music in America	

Music Techniques

MUSC 220	Brass Instrument Techniques	1
MUSC 230	Woodwind Instrument Techniques	1
MUSC 240	Percussion Techniques	1
MUSC 250	String Instrument Techniques	1
MUSC 260	Voice Techniques	1
MUSC 315	Music Technology	3

Conducting and Literature

MUSC 316	Principles of Instrumental Conducting	3

COURSE PLAN FOR LICENSURE ONLY
ALREADY DEGREED
MUSIC - INSTRUMENTAL PK - 12

GRADUATE COURSE REQUIREMENTS

PROFESSIONAL YEAR: SUMMER

TCHG 516m/s	Curriculum and Instruction	3
TCHG 543	Classroom Management and Discipline	3

PROFESSIONAL YEAR: FALL

CPSC 580	Technology for Teachers	3
ENGL 522	Reading and Writing in Content Areas	3
PSYC 535	Exceptional Learner	3
150 HOURS	*Field Experience*	

PROFESSIONAL YEAR: SPRING

TCHG 510	Internship	6

PREREQUISITE CONTENT COURSE AND SUPPORT REQUIREMENTS
Equivalent Courses May Be Accepted

PSYC 210 & 211	Human Growth and Behavior I and II **OR**	6
PSYC 307	Developmental Psychology	3
SOCL 314	Education, Culture and Society	3
PSYC 312	Educational Psychology	3

Applied Music and Ensembles

Applications MUSC 131-132. 231-232, 331-332 and 431-432 (Senior Recital)	16
Credits of Band and/or Orchestra	8
Non-credits of MUSC 012	8
MUSC 115-116 and 215-216 or four (4) semesters of Applications PIAN 130; successful completion of the piano proficiency for instrumental music education majors	4

Music Theory and History

MUSC 209-210	Ear Training	2
MUSC 309-310	Ear Training	2
MUSC 211-212	Elementary Theory of Music	3
MUSC 311-312	Advanced Theory of Music	3
MUSC 413	Counterpoint	3
MUSC 207G & 208G	The World's Music I and II	6
MUSC 303-304-305	History of Western Music	9
MUSC 401W	Seminar in Music Bibliography	1
MUSC 407W	Music in America	3

Music Techniques

MUSC 220	Brass Instrument Techniques	1
MUSC 230	Woodwind Instrument Techniques	1
MUSC 240	Percussion Techniques	1
MUSC 250	String Instrument Techniques	1
MUSC 260	Voice Techniques	3
MUSC 315	Music Technology	3

Conducting and Literature

MUSC 316	Principles of Instrumental Conducting	3
MUSC 430 or 440	Wind or Orchestral Literature and Conducting	3
MUSC 337	Music in Elementary Schools	3

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

GRADUATE COURSE REQUIREMENTS

PHYS 501	Models of Dynamic Systems	3
PHYS 502	Quantum Physics	3
PHYS 504	Electromagnetism	3

PROFESSIONAL YEAR - SUMMER

TCHG 516 m/s	Curriculum and Instruction	3
TCHG 543	Classroom Management and Discipline	3
PHYS 5___	500 Level Elective	3

PROFESSIONAL YEAR - FALL

ENGL 522	Reading and Writing in Content Areas	3
PSYC 535	Exceptional Learner	3
CPSC 580	Technology for Teachers	3
150 HOURS	*Field Experience*	

PROFESSIONAL YEAR - SPRING

SOCL 501	Multiculturalism, Diversity & Education	3
TCHG 510	Internship	6

TOTAL GRADUATE COURSE HOURS 36

PREREQUISITE CONTENT COURSE AND SUPPORT REQUIREMENTS
Equivalent Courses May Be Accepted

PSYC 210 & 211	Human Growth and Behavior I and II **OR**	6
PSYC 307	Developmental Psychology	3
SOCL 314	Education, Culture and Society	3
PSYC 312	Educational Psychology	3
CPEN 214	Digital Logic Design	3
CPEN 371	Professional Ethics	1
CPSC 230 & 230L	Computer Programming I & Lab	4
CPSC 231 & 231L	Computer Programming II & Lab	4
ENGR 121	Statics	3
ENGR 211 & 211L	Introduction to Electric Circuits & Lab	4
PHYS 201 & 201L	General Physics & Lab	4
PHYS 202 & 202L	General Physics & Lab	4
PHYS 203	General Physics	3
PHYS 351	Modern Physics	

(Continued on following page)

Two electives from the following:

CPEN 315 & 315L	Digital System Design & Lab	4
CPEN 422	Microprocessors	3
ENGR 212 & 212L	Electronics & Lab	4
PHYS 352	Device Physics	3
PHYS 421	System Design Lab	3
PHYS 431	Optical Physics	3
PHYS 441	Modeling and Simulation	3
MATH 440	Mathematical Modeling	3

Support Courses:

MATH 140	Calculus and Analytic Geometry	4
MATH 240	Intermediate Calculus	4
MATH 250	Multivariable Calculus	4
MATH 320	Ordinary Differential Equations	4

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

GRADUATE COURSE REQUIREMENTS

SENIOR YEAR

PHYS 501	Models of Dynamic Systems	3
PHYS 502	Quantum Physics	3
PHYS 504	Electromagnetism	3

FIFTH YEAR - SUMMER

TCHG 516m/s	Curriculum and Instruction	3
TCHG 543	Classroom Management and Discipline	3
PHYS _____	500 Level Elective	3

FIFTH YEAR - FALL

ENGL 522	Teaching Reading and Writing	3
PSYC 535	Exceptional Learner	3
CPSC 580	Technology for Teachers	3
150 HOURS	*Field Experience*	

FIFTH YEAR - SPRING

SOCL 501	Multiculturalism, Diversity & Education	3
TCHG 510	Internship	6

TOTAL GRADUATE COURSE HOURS 36

Undergraduate Content and Support Course Requirements

MATH 125	Statistics	3
COMM 201	Public Speaking	3
PSYC 210	Human Growth and Behavior I	3
PSYC 211	Human Growth and Behavior II	3
PSYC 312	Educational Psychology	3
SOCL 314	Educational, Culture and Society	3
CPEN 214	Digital Logic Design	3
CPEN 371	Professional Ethics	1
CPSC 230/L	Computer Programming I	4
CPSC 231L	Computer Programming II	4
ENGR 121	Engineering Design	3
ENGR 211/L	Introduction to Electric Circuits and Lab	4
PHYS 201L	General Physics and Lab	4
PHYS 202/L	General Physics and Lab	4
PHYS 203	General Physics	3
PHYS 351	Modern Physics	3
PCSE 499	Capstone, Writing Intensive	1

(Continued on following page)

Choose two electives from the following:

CPEN 315/L	Digital Systems Design Lab	1
CPEN 422	Microprocessors	3
ENGR 212/L	Electronics Laboratory	1
PHYS 352	Device Physics	3
PHYS 421	System Design Lab (Data Acquisition)	3
PHYS 431	Optical Physics	3
PHYS 441	Modeling and Simulation	3
MATH 440	Mathematical Modeling	3

Support Courses

MATH 140	Calculus and Analytic Geometry	4
MATH 240	Intermediate Calculus	4
MATH 250	Multivariable Calculus	4
MATH 320	Ordinary Differential Equations	4

COURSE PLAN FOR LICENSURE ONLY
ALREADY DEGREED
PHYSICS 6 - 12

GRADUATE COURSE REQUIREMENTS

PROFESSIONAL YEAR: SUMMER

TCHG 516m/s	Curriculum and Instruction	3
TCHG 543	Classroom Management and Discipline	3

PROFESSIONAL YEAR: FALL

ENGL 522	Reading & Writing in Content Areas	3
PSYC 535	Exceptional Learner	3
CPSC 580	Technology for Teachers	3
150 HOURS	*Field Experience*	

PROFESSIONAL YEAR: SPRING

TCHG 510	Internship	6

PREREQUISITE CONTENT COURSE AND SUPPORT REQUIREMENTS
Equivalent Courses May Be Accepted

PSYC 210 & 211	Human Growth and Behavior I and II **OR**	6
PSYC 307	Developmental Psychology	3
SOCL 314	Education, Culture and Society	3
PSYC 312	Educational Psychology	3
CPEN 214	Digital Logic Design	3
CPEN 371	Professional Ethics	1
CPSC 230 & 230L	Computer Programming I & Lab	4
CPSC 231 & 231L	Computer Programming II & Lab	4
ENGR 121	Statics	3
ENGR 211 & 211L	Introduction to Electric Circuits & Lab	4
PHYS 201 & 201L	General Physics & Lab	4
PHYS 202 & 202L	General Physics & Lab	4
PHYS 203	General Physics	3
PHYS 351	Modern Physics	3

Two electives from the following:

CPEN 315 & 315L	Digital System Design & Lab	4
CPEN 422	Microprocessors	3
ENGR 212 & 212L	Electronics & Lab	4
PHYS 352	Device Physics	3
PHYS 421	System Design Lab	3
PHYS 431	Optical Physics	3
PHYS 441	Modeling and Simulation	3
MATH 440	Mathematical Modeling	3

Support Courses:

MATH 140	Calculus and Analytic Geometry	4
MATH 240	Intermediate Calculus	4
MATH 250	Multivariable Calculus	4
MATH 320	Ordinary Differential Equations	4

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

GRADUATE COURSE REQUIREMENTS

ENGL 512	Multicultural Literature	3
PHIL 521	Critical Thinking	3
SPAN 563	The Study of Cervantes	3

PROFESSIONAL YEAR - SUMMER

TCHG 516 m/s	Curriculum and Instruction	3
TCHG 543	Classroom Management and Discipline	3

PROFESSIONAL YEAR - FALL

ENGL 522	Reading and Writing in Content Areas	3
PSYC 535	Exceptional Learner	3
CPSC 580	Technology for Teachers	3
SPAN 538	Apprenticeship in Teaching	3
150 HOURS	*Field Experience*	

PROFESSIONAL YEAR - SPRING

SOCL 501	Multiculturalism, Diversity and Education	3
TCHG 510	Internship	6
	TOTAL GRADUATE COURSE HOURS	36

PREREQUISITE CONTENT COURSE AND SUPPORT REQUIREMENTS
Equivalent Courses May Be Accepted

PSYC 210 & 211	Human Growth and Behavior I and II **OR**	6
PSYC 307	Developmental Psychology	3
SOCL 314	Education, Culture and Society	3
PSYC 312	Educational Psychology	3
SPAN 101	Elementary Spanish I	3
SPAN 102	Elementary Spanish II	3
SPAN 201	Intermediate Spanish I	3
SPAN 202	Intermediate Spanish II	3
SPAN 301	Grammar & Composition **OR**	3
SPAN 303	Advanced Grammar & Composition	3
SPAN 302	Effective Communication in Spanish **OR**	3
SPAN 304	Advanced Communication in Spanish **OR**	3
SPAN 308	Conversation via Cinema	3
SPAN 311	Global Hispanic Civilization & Culture	3

(Continued on following page)

Choose three of the following:

SPAN 351	Introduction to Spanish-American Lit	3
SPAN 352	Introduction to Spanish-American Lit	3
SPAN 353	Introduction to Spanish Literature	3
SPAN 354	Introduction to Spanish Literature	3
6 CREDITS	Two (2) Courses in Spanish	6
MLAN 308	Cross-Cultural Awareness	3
MLAN 338	Teaching Languages	3

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

GRADUATE COURSE REQUIREMENTS

SENIOR YEAR

ENGL 512	Multicultural Literature	3
PHIL 521	Critical Thinking	3
SPAN 563	The Study of Cervantes	3

FIFTH YEAR - SUMMER

TCHG 516m/s	Curriculum and Instruction	3
TCHG 543	Classroom Management and Discipline	3
SPAN 538	Apprenticeship in Teaching	3

FIFTH YEAR - FALL

ENGL 522	Teaching Reading and Writing	3
PSYC 535	Exceptional Learner	3
CPSC 580	Technology for Teachers	3
150 HOURS	*Field Experience*	

FIFTH YEAR - SPRING

SOCL 501	Multiculturalism, Diversity & Education	3
TCHG 510	Internship	6

TOTAL GRADUATE COURSE HOURS 36

Undergraduate Content and Support Course Requirements

MATH 125	Statistics	3
COMM 201	Public Speaking	3
PSYC 210	Human Growth and Behavior I	3
PSYC 211	Human Growth and Behavior II	3
SOCL 314	Education, Culture and Society	3
PSYC 312	Educational Psychology	3
SPAN 101-102	Elementary Spanish	3
SPAN 201-202	Intermediate Spanish	3

Choose one of the following:

SPAN 301	Grammar and Composition	3
SPAN 303	Advanced Grammar and Composition	3

Choose one of the following:

SPAN 302	Effective Communication in Spanish	3
SPAN 304	Advanced Communication in Spanish	3
SPAN 308	Conversation via Cinema	3
SPAN 311	Global Hispanic Civilization & Culture	3

(Continued on following page)

Choose three from the following four:

SPAN 351	Introduction to Spanish-American Lit	3
SPAN 352	Introduction to Spanish-American Lit	3
SPAN 353	Introduction to Spanish Literature	3
SPAN 354	Introduction to Spanish Literature	3
6 CREDITS	Two (2) Courses in Spanish	6
MLAN 308	Cross-Cultural Awareness	3
MLAN 338	Teaching Languages	3

Four semesters of a language different from the one of concentration, or two semesters of a language other than the one of concentration, CLST 210, and either MLAN 205G or MLAN 206G.

LANG 101	LANG 201
LANG 102	LANG 202

OR

LANG 101	CLST 210
LANG 102	MLAN 205G or 206G

COURSE PLAN FOR LICENSURE ONLY
ALREADY DEGREED
SPANISH PK - 12

GRADUATE COURSE REQUIREMENTS

PROFESSIONAL YEAR: SUMMER

TCHG 516m/s	Curriculum and Instruction	3
TCHG 543	Classroom Management and Discipline	3

PROFESSIONAL YEAR: FALL

ENGL 522	Reading & Writing in Content Areas	3
PSYC 535	Exceptional Learner	3
CPSC 580	Technology for Teachers	3
150 HOURS	*Field Experience*	

PROFESSIONAL YEAR: SPRING

TCHG 510	Internship	6

PREREQUISITE CONTENT COURSE AND SUPPORT REQUIREMENTS
MAT WITH LICENSURE SPANISH PK - 12
EQUIVALENT COURSES MAY BE ACCEPTED

PSYC 210 & 211	Human Growth and Behavior I and II **OR**	6
PSYC 307	Developmental Psychology	3
SOCL 314	Education, Culture and Society	3
PSYC 312	Educational Psychology	3
SPAN 101	Elementary Spanish I	3
SPAN 102	Elementary Spanish II	3
SPAN 201	Intermediate Spanish I	3
SPAN 202	Intermediate Spanish II	3
SPAN 301	Grammar & Composition **OR**	3
SPAN 303	Advanced Grammar & Composition	3
SPAN 302	Effective Communication in Spanish **OR**	3
SPAN 304	Advanced Communication in Spanish **OR**	3
SPAN 308	Conversation via Cinema	3
SPAN 311	Global Hispanic Civilization & Culture	3

Choose three of the following:

SPAN 351	Introduction to Spanish-American Lit	3
SPAN 352	Introduction to Spanish-American Lit	3
SPAN 353	Introduction to Spanish Literature	3
SPAN 354	Introduction to Spanish Literature	3
6 CREDITS	Two (2) Courses in Spanish	6
MLAN 308	Cross-Cultural Awareness	3
MLAN 338	Teaching Languages	3

COURSE PLAN FOR MAT WITH LICENSURE
ALREADY DEGREED
THEATER PK - 12

GRADUATE COURSE REQUIREMENTS

THEA 550	Stage Management	3
THEA 568	Playwriting	3
THEA 561	The One-Act Play **OR**	
THEA 546	History of Musical Theater	3

PROFESSIONAL YEAR - SUMMER

TCHG 516 m/s	Curriculum and Instruction	3
TCHG 543	Classroom Management and Discipline	3

PROFESSIONAL YEAR - FALL

ENGL 522	Reading and Writing in Content Areas	3
PSYC 535	Exceptional Learner	3
CPSC 580	Technology for Teachers	3
THEA 578	Teaching Apprenticeship	3
150 HOURS	*Field Experience*	

PROFESSIONAL YEAR - SPRING

SOCL 501	Multiculturalism, Diversity & Education	3
TCHG 510	Internship	6
	TOTAL GRADUATE COURSE HOURS	36

PREREQUISITE CONTENT COURSE AND SUPPORT REQUIREMENTS
Equivalent Courses May Be Accepted

PSYC 210 & 211	Human Growth and Behavior I and II **OR**	3
PSYC 307	Developmental Psychology	3
SOCL 314	Education, Culture and Society	3
PSYC 312	Educational Psychology	3
THEA 100	What is Theater?	1
THEA 210	Intro to Drama I	3
THEA 211	Intro to Drama II	3
THEA 232	Playing an Action	3
THEA 250	Intro to Tech Theater	3
THEA 252	Intro to Costume	3
THEA 250L	Backstage practicum	
	(3 semesters required @ 1 credit each)	3
THEA 330	Pursuit of Realism	3
THEA 336	Directing	3
THEA 498	Senior Thesis	3

(Continued on following page)

Choose one of the following:

THEA 346	History of Musical Theater	3
THEA 366	Rise of Realism	3
THEA 367	Modernism & Avant-Garde	3
ENGL 421	Shakespeare	3

Choose two of the following:

THEA 351	Tech Theater	3
THEA 354	Scene Design	3
THEA 356	Lighting Design	3
THEA 452	Custom Design	3

Participation in two (2) studio productions also required

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

GRADUATE COURSE REQUIREMENTS

SENIOR YEAR

THEA 550	Stage Management	3
THEA 568	Playwriting	3
THEA 561	The One-Act Play **OR**	
THEA 546	History of Musical Theater	3

FIFTH YEAR - SUMMER

TCHG 516 m/s	Curriculum and Instruction	3
TCHG 543	Classroom Management and Discipline	3

FIFTH YEAR - FALL

ENGL 522	Reading and Writing in Content Areas	3
PSYC 535	Exceptional Learner	3
CPSC 580	Technology for Teachers	3
THEA 578	Teaching Apprenticeship	3
150 HOURS	*Field Experience*	

FIFTH YEAR - SPRING

SOCL 501	Multiculturalism, Diversity & Education	3
TCHG 510	Internship	6
	TOTAL GRADUATE COURSE HOURS	36

Undergraduate Content and Support Course Requirements

MATH 125	Statistics	3
COMM 201	Public Speaking	3
PSYC 210	Human Growth and Behavior	3
PSYC 211	Human Growth and Behavior II	3
SOCL 314	Education, Culture and Society	3
PSYC 312	Educational Psychology	3
THEA 100	What is Theater?	1
THEA 210	Intro to Drama I	3
THEA 211	Intro to Drama II	3
THEA 232	Playing an Action	3
THEA 250	Intro to Tech Theater	3
THEA 252	Intro to Costume	3
THEA 250L	Backstage practicum	
	(3 semesters required @ 1 credit each)	3
THEA 330	Pursuit of Realism	3
THEA 336	Directing	3
THEA 498	Senior Thesis	3

(Continued on following page)

Choose one of the following:

THEA 346	History of Musical Theater	3
THEA 366	Rise of Realism	3
THEA 367	Modernism & Avant-Garde	3
ENGL 421	Shakespeare	3

Choose two of the following:

THEA 351	Tech Theater	3
THEA 354	Scene Design	3
THEA 356	Lighting Design	3
THEA 452	Custom Design	3

Participation in two (2) studio productions also required

BA Requirements:

FNAR 201G or 202G	Survey of World Art I or II	3
MUSC 207G or 208G	The World's Music	3

COURSE PLAN FOR LICENSURE ONLY
ALREADY DEGREED
THEATER PK - 12

GRADUATE COURSE REQUIREMENTS

PROFESSIONAL YEAR - SUMMER

TCHG 516 m/s	Curriculum and Instruction	3
TCHG 543	Classroom Management and Discipline	3

PROFESSIONAL YEAR - FALL

ENGL 522	Reading and Writing in Content Areas	3
PSYC 535	Exceptional Learner	3
CPSC 580	Technology for Teachers	3
150 HOURS	*Field Experience*	

PROFESSIONAL YEAR - SPRING

TCHG 510	Internship	6

PREREQUISITE CONTENT COURSE AND SUPPORT REQUIREMENTS
Equivalent Courses May Be Accepted

PSYC 210 & 211	Human Growth and Behavior I and II **OR**	6
PSYC 307	Developmental Psychology	3
SOCL 314	Education, Culture and Society	3
PSYC 312	Educational Psychology	3
THEA 100	What is Theater?	1
THEA 210	Intro to Drama I	3
THEA 211	Intro to Drama II	3
THEA 232	Playing an Action	3
THEA 250	Intro to Tech Theater	3
THEA 252	Intro to Costume	3
THEA 250L	Backstage practicum (3 semesters required @ 1 credit each)	3
THEA 330	Pursuit of Realism	3
THEA 336	Directing	3

Choose one of the following:

THEA 346	History of Musical Theater	3
THEA 366	Rise of Realism	3
THEA 367	Modernism & Avant-Garde	3
ENGL 421	Shakespeare	3

Choose two of the following:

THEA 351	Tech Theater	3
THEA 354	Scene Design	3
THEA 356	Lighting Design	3
THEA 452	Custom Design	3

Participation in two (2) studio productions also required

MASTER OF ARTS IN TEACHING
COURSES OF INSTRUCTION

ART

FNAR 534. Theory and Practice of Art Education (3-3-0)
Prerequisite: Enrollment in the MAT Program or consent of instructor. (Fall)
A study of the theories of art education related to child development, perceptual theory and general educational philosophy. Course focuses on the disciplines of art, art history, art production, art criticism and aesthetics.

FNAR 589. Advanced Crafts (3-3-0)
Prerequisite: Enrollment in the MAT Program or consent of instructor. (Summer)
Advanced crafts is a course that continues the exploration of craft processes and materials appropriate for art teachers. Possible projects include weaving, copper enameling, fabric surface design, wood construction and jewelry making. Students will research a particular craft and present their research to the class.

FNAR 595. Advanced Topics in Art (Credit varies)
Prerequisite: Enrollment in the MAT Program or consent of the instructor.
Course topics are selected on the basis of faculty and student interests.

FNAR 599. Independent Study (1-6 Credits)
Prerequisite: Enrollment in the MAT Program or consent of instructor.

BIOLOGY

ENVS 538. Apprenticeship in Teaching Biology (4-0-4)
Prerequisite: Enrollment in the MAT Program or consent of instructor. (Summer)
A course in which prospective teachers are introduced to methods and materials of teaching biology. Emphasis is on laboratory exercises and demonstrations. Apprentice teachers are expected to design and instruct a variety of laboratory exercises. Apprentice teachers also maintain a journal of practical and methodology experiences.

BIOL 595. Advanced Topics (Credit varies)
Prerequisite: Enrollment in the MAT Program or consent of the instructor.
Course topics are selected on the basis of faculty and student interests.

BIOL 599. Independent Study ((1-6 Credits)
Prerequisite: Enrollment in the MAT Program or consent of instructor.

COMPUTER SCIENCE

CPSC 580. Technology for Teachers (3-3-0)
Prerequisite: Basic computer skills in word processing, spreadsheets and presentation software and enrollment in the MAT Program or consent of instructor.(Fall)
This course addresses instructional technology required for the K-12 classroom. Issues, skills, and strategies associated with instructional technology are introduced. Learning theory is studied as the foundation for applying instructional technology. Experience involving practical application of instructional technology in the classroom is gained throughout the course. Students develop lesson units addressing specific Virginia SOLs using the learning theory and instructional technology covered in this course.

CPSC 595. Advanced Topics In Computer Science(Credit varies)
Prerequisite: Enrollment in the MAT Program or consent of the instructor.
Course topics are selected on the basis of faculty and student interests.

CPSC 599. Independent Study (1-6 Credits)
Prerequisite: Enrollment in the MAT Program or consent of instructor.

ENGLISH

ENGL 501. Teaching Literature (3-3-0)
Prerequisite: Enrollment in the MAT Program or consent of instructor. (Summer)
In this seminar, students explore methods for teaching literature. The participants read and analyze various literary works. In addition the seminar introduces students to literary and pedagogical theories, but the emphasis is on the application of these theories to the language arts classroom.

ENGL 512. Reading Multicultural Literature (3-3-0)
Prerequisite: Enrollment in the MAT Program or consent of instructor.
This course offers students an opportunity to read and discuss important works written by American authors of diverse racial, religious, regional and ethnic backgrounds. Students analyze literature and discuss strategies for teaching this literature.

ENGL 514. Critical Reading of Children's Literature (3-3-0)
Prerequisite: Enrollment in the MAT Program or consent of instructor.
This course is a theoretical inquiry into the nature of children's literature. While reading a variety of contemporary

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

ENGL 521. Teaching Composition (3-3-0)
Prerequisite: Enrollment in the MAT Program or consent of the instructor.
This course is an introduction to the theory and practice of writing. Not only do participants explore several ways to teach writing, but they also write and present classroom assignments that exemplify these methods. Finally, each student develops a theory of composition that can be used in the classroom.

ENGL 522. Reading and Writing in Content Areas (3-3-0)
Prerequisite: *Enrollment in the MAT Program or consent of instructor.*
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.

ENGL 532. Language Varieties in American Schools (3-3-0)
Prerequisite: ENGL 430 and enrollment in the MAT Program or consent of instructor. (Fall, Spring)
This course surveys topics relevant to the language arts classroom: illustrative topics include grammar and writing, language acquisition, techniques to facilitate the learning of Standard English by speakers of other languages and dialects, language variation, spoken verses written English, etc. Students will develop a deep awareness of the nature of language, knowledge that has immediate implications for how we engage our students in the school classroom. Concepts in linguistics will be reviewed as necessary. All work will be relativized to the school classroom environment. Course includes a 15-hour research-based field experience.

ENGL 595. Advanced Topics in English (Credit varies)
Prerequisite: Enrollment in the MAT Program or consent of instructor.
Course topics are selected on the basis of faculty and student interests.

ENGL 599. Independent Study (1-6 Credits)
Prerequisite: Enrollment in the MAT Program or consent of instructor.

FRENCH

FREN 503. Advanced Writing and Stylistics (3-3-0)
Prerequisite: FREN 303W or consent of the instructor.
The focus of this course is on process writing at the advanced level. Through a variety of activities, including imitation of models, creation of multiple drafts, peer editing and a system of guided corrections, students are encouraged to develop their writing skills, improve their linguistic competence, and master appropriate levels of style in French. In addition to the basic material of the course, students create lesson plans and present selected areas of French structure to the class, keep a journal in which they reflect on teaching styles and techniques, guide the peer editing process for selected classes, serve as tutors for the undergraduate students, and meet regularly with the instructor to discuss questions of methodology and pedagogy. In addition to the basic writing assignments for the course, graduate students will be required to submit one longer piece of writing, and they will also be evaluated on their overall level of preparedness for the teaching of French.

FREN 538. Apprenticeship in Teaching (3-3-0)
Prerequisite: Enrollment in the MAT Program or consent of instructor. (Fall, Spring)
This course introduces prospective teachers to the skills necessary to plan, implement, and evaluate effective lessons in the area of French instruction. In this course, students are assigned to a University professor and work with beginning foreign language students.

FREN 595. Advanced Topics in French (Credit varies)
Prerequisite: Enrollment in the MAT Program or consent of instructor.
Course topics are selected on the basis of faculty and student interests.

FREN 599. Independent Study (1-6 Credits)
Prerequisite: Enrollment in the MAT Program or consent of instructor.

HISTORY

HIST 502. Roman History (3-3-0)
Prerequisite: Enrollment in the MAT Program or consent of the instructor.
A history of Rome from the early history of Italy to the fall of the Roman Empire.

HIST 518. Nineteenth Century Europe (3-3-0)
Prerequisite: Enrollment in the MAT Program or consent of the instructor.
This course covers the political, social, economic and cultural history of Europe from 1800-1900. Topics covered include the Napoleonic Empire, Metternich and era of reaction, the Industrial Revolution, Liberalism, Nationalism and Socialism, the Revolution of 1848, the French Second Empire, the unification of Italy and Germany, the era of Bismark, 19th imperialism and the Germany of William II.

HIST 552. Europe's Settlement of North America (3-3-0)
Prerequisite: Enrollment in the MAT Program or consent of the instructor.
An examination of European intrusion into North America during the 16th & 17th centuries. Interactions among

Africans, Europeans, and Native-Americans in Dutch, English, French,and Spanish outposts will be highlighted.

HIST 553. Colonial North America and the Creation of the United States. (3-3-0)
Prerequisite: Enrollment in the MAT Program or consent of the instructor.
An examination of the interactions among Africans, Europeans and Native Americans in English, French and Spanish North American settlements and provinces in the 18th century, concluding with the creation of the United States in the 1700's and 1780's.

HIST 556. The United States in the Gilded Age and Progressive Era, 1870's to 1920's (3-3-0)
Prerequisite: Enrollment in the MAT Program or consent of the instructor.
This course is an analysis of the major economic, social, cultural and political trends in America from the 1870's through the 1920's.

HIST 565. History of Islam (3-3-0)
Prerequisite: Enrollment in the MAT Program or consent of the instructor.
This course examines the fundamental tenets of Islam and its impact on the course of history over the last 14 centuries.

HIST 572. History of Virginia (3-3-0)
Prerequisite: Enrollment in the MAT Program or consent of the instructor.
An examination of the major political, economic, social and cultural developments in Virginia from the colonial period to the present. The course is divided into seven eras.

HIST 573. Major Themes in Contemporary Africa (3-3-0)
Prerequisite: Enrollment in the MAT Program or consent of the instructor.
Major issues and events that affect contemporary African societies. A course designed to help students make a creative and analytical probe into the condition of human life in the Third World in general and Africa in particular beyond the year 2002.

HIST 595. Advanced Topics in History (Credit varies)
Prerequisite: Enrollment in the MAT Program or consent of instructor.
Course topics are selected on the basis of faculty and student interests.

HIST 599. Independent Study (1-6 Credits)
Prerequisite: Enrollment in the MAT Program or consent of instructor.

MATHEMATICS

MATH 570. The Study of Mathematics (3-3-0)
Prerequisite: Enrollment in the MAT Program or consent of instructor.
Focus on the methodological background necessary for teaching school mathematics based on current understanding and insights derived from both content and pedagogy. Development of creative instructional approaches that are meaningful and mathematically correct and which instill enthusiasm and satisfaction in learning and using mathematics. Includes a 12-hour field experience.

MATH 573. History of Mathematics (3-3-0)
Prerequisite: Enrollment in the MAT Program or consent of instructor. (Summer)
A study of the origins, philosophy and development of mathematics from classical antiquity through the 20th century. It focuses on critical periods in the evolution of areas such as geometry, number theory, algebra and calculus. Involves problem solving and reading.

MATH 575. Computers & Calculators in School Mathematics (3-3-0)
Prerequisite: Enrollment in the MAT Program or consent of instructor. (Summer)
This course explores 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)
Prerequisite: Enrollment in the MAT Program or consent of instructor. (Summer)
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)
Prerequisite: Enrollment in the MAT Program or consent of the instructor. (Spring)
This course 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)
Prerequisite: Enrollment in the MAT Program or consent of the instructor. (Fall).
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 595. Advanced Topics in Mathematics (Credit varies)
Prerequisite: Enrollment in the MAT Program or consent of the instructor.
Course topics are selected on the basis of faculty and student interests.

MATH 599. Independent Study (Credit varies)
Prerequisite: Enrollment in the MAT Program or consent of instructor.

MUSIC

MUSC 515. Orchestration (3-3-0)
Prerequisite: MUSC 310, 312; music education major pursuing the MAT degree, degreed music teacher seeking recertification, or consent of the instructor. (Fall)
A course in which the basic concepts of arranging music for various groups of instruments are studied. After a general survey of the instruments of the orchestra covering ranges, clefs, timbre, special effects, and terminology, techniques of actual orchestration are studied through written projects and analysis of scores. A significant final project requires either an arrangement or an original composition for the major ensemble of the student. This course is required for music education majors pursuing the Master of Arts in Teaching degree.

MUSC 520. Choral Literature and Conducting (3-3-0)
Prerequisite: MUSC 310, 312 and 314; choral music education major pursuing the MAT degree, degreed music teacher seeking recertification, or consent of the instructor. (Spring)
A survey course, which requires historical and structural analysis and conducting of major choral literature from the Renaissance to the present. Students conduct live ensembles both in the classroom and in the rehearsal hall. Special emphasis is placed on major works, composers, compositional styles, analysis, programming, error detection, and conducting. Students read and discuss a variety of material to develop the knowledge and pedagogical skills necessary to become effective teachers, scholars and musicians. A major research paper and presentation are required in addition to ten hours of field observation and teaching experience in the public schools. This course is required for the Master of Arts in Teaching degree with a concentration in choral music education.

MUSC 530. Wind Literature and Conducting (3-3-0)
Prerequisite: MUSC 310, 312, and 316; instrumental music education major with an emphasis in band pursuing the MAT degree, degreed music teacher seeking certification, or consent of the instructor. (Spring)
A comprehensive study of wind groups focusing on instrumentation and literature from the earliest beginnings to the present. Special emphasis on major works, composers, stylistic changes, programming, and conducting. Students read and discuss a variety of material to develop the knowledge and pedagogical skills necessary to become effective teachers, scholars, and musicians. A major research paper and presentation are required in addition to ten hours of field observation and teaching experience in the public schools. Students conduct live ensembles both in the classroom and in the rehearsal hall. The course is required for the Master of Arts in Teaching degree with a concentration in instrumental music education with an emphasis in band.

MUSC 533-534i. Applied Graduate Wind Conducting (2-2-0)
Prerequisite: MUSC 316 and MUSC 530. For Applications COND 534: The successful completion of Applications COND 533.
The study of applied wind conducting at the graduate level is to develop further the synthesis of baton technique, rehearsal technique, expression, and scholarship. Through weekly practice with the CNU Wind Ensemble; conducting on concerts and recitals; attending master classes, recitals, and concerts; listening to recording; and reading articles and books on conducting and pedagogy, a student will have the opportunity to improve technique and performance and achieve a greater musical and historical understanding of the repertoire.

MUSC 533-534c. Applied Choral Conducting (2-2-0)
Prerequisite: MUSC 316 and MUSC 530. For Applications COND 534: The successful completion of Applications COND 533.
The study of applied choral conducting at the graduate level is to develop further the synthesis of baton technique, rehearsal technique, expression, and scholarship. Through weekly practice with either the CNU Chamber Choir or University Chorale; conducting on concerts and recitals; attending master classes, recitals, and concerts; listening to recordings; and the reading articles and books on conducting and pedagogy, a student will have the opportunity to improve technique and performance and achieve a greater musical and historical understanding of the repertoire.

MUSC 533-534o. Applied Graduate Wind Conducting (2-2-0)
Prerequisite: MUSC 316 and MUSC 530. For Applications COND 534: The successful completion of Applications COND 533.
The study of applied orchestral conducting at the graduate level is to develop and further the synthesis of baton technique, rehearsal technique, expression, and scholarship. Through weekly practice with the CNU Orchestra; conducting of concerts and recitals; attending master classes, recitals, and concerts; listening to recordings; and reading articles and books on conducting and pedagogy, a student will have the opportunity to improve technique and performance and achieve a greater musical and historical understanding of the repertoire.

MUSC 537. Music in the Elementary Schools (3-3-0)
Prerequisite: Music education major pursuing the MAT degree, degreed music teacher seeking recertification, or consent of the instructor. (Fall)
Fundamental procedures of and experiences in teaching elementary school music, stressing music materials suit-

able for the first six grades. Methods discussed and practiced include those of Orff, Kodaly, Suzuki, Manhattanville, and Dalcroze. An introduction to fretted instruments and recorders is included also. Students read and discuss a variety of material to develop the knowledge and pedagogical skills necessary to become effective teachers, scholars, and musicians. A major research paper and presentation are required in addition to ten hours of field observation and teaching experience in the public elementary schools. This course is required for music education majors pursuing the MAT degree.

MUSC 540. Orchestral Literature and Conducting (3-3-0)
Prerequisite: MUSC 310, 312 and 316; instrumental music education major with an emphasis in orchestra pursuing the MAT degree, degreed music teacher seeking recertification, or consent of the instructor. (Spring)
A comprehensive study of orchestral groups focusing on instrumentation and literature from the earliest beginnings to the present. Special emphasis on major works, composers, stylistic changes, programming, and conducting. Students read and discuss a variety of material to develop the knowledge and pedagogical skills necessary to become effective teachers, scholars, and musicians. A major research paper and presentation are required in addition to ten hours of field observation and teaching experience in the public schools. Students conduct live ensembles both in the classroom and in the rehearsal hall. This course is required for the MAT degree with a concentration in instrumental music education with an emphasis in orchestra.

MUSC 570. Marching Band Techniques (2-2-0)
Prerequisite: MUSC 310, 312 and 316; instrumental music education major pursuing the MAT degree, degreed music teacher seeking certification, or consent of the instructor. (Fall)
Techniques and methods for organizing, programming, rehearsing, teaching, and arranging music for a marching band. Computer assisted drill design is a major component of this course. A comprehensive notebook and extensive outside readings and viewings or videos are required in addition to ten hours of field observation and teaching experience in public schools. This course is required for the MAT degree with a concentration in instrumental music education.

MUSC 580. Jazz Band Techniques (2-2-0)
Prerequisite: Enrollment in the MAT Program or consent of instructor. (Summer)
Techniques and methods for organizing, programming, rehearsing, and teaching improvisation in a school jazz band setting. A comprehensive notebook and extensive outside readings are required in addition to ten hours of field observation and teaching experience in the public schools. This course is required for the MAT degree with a concentration in instrumental music education.

MUSC 590. Jazz Choir Techniques (2-2-0)
Prerequisite:MUSC 310, 312, and 314 (Summer)
Techniques and methods employed for the organization and development of a swing/jazz choir. Literature, choreography, and performance practice are addressed. A comprehensive notebook and extensive outside readings are required in addition to ten hours of field observation and teaching experience in the public schools. This course is required for the MAT degree with a concentration in choral music education.

MUSC 595. Advanced Topics in Music (Credit varies)
Prerequisite: Enrollment in the MAT Program or consent of instructor.
Course topics are selected on the basis of faculty and student interests.

MUSC 599. Independent Study (1-6 Credits)
Prerequisite: Enrollment in the MAT Program or consent of instructor.

PHILOSOPHY

PHIL 521. Critical Thinking for Teachers. (3-3-0)
Prerequisite: Enrollment in the MAT Program or consent of instructor. (Spring)
The role of thinking skills, dispositions, and inquiry are treated and related to a humanistic, Socratic conception of critical thinking. The relations of critical thinking to formal logic to creative thinking, and to the emotions are examined. Some attention is devoted to organizing lesson plans to incorporate critical thinking objectives. Instruction techniques that foster critical thinking are also treated. The assessment of critical thinking skills and dispositions is also covered.

PHIL 595. Advanced Topics in Philosophy (Credit varies)
Prerequisite: Enrollment in the MAT Program or consent of instructor.
Course topics are selected on the basis of faculty and student interests.

PHIL 599. Independent Study (1-6 Credits)
Prerequisite: Enrollment in the MAT Program or consent of instructor.

PSYCHOLOGY

PSYC 521. Reading Acquisition and Development. (3-3-0)
Prerequisite: Enrollment in the MAT Program or consent of instructor and reading tutorial experience. (Summer, Fall)
This course examines theories, principles, strategies, and research related to reading acquisition and development in children from preschool through primary grades. The developmental nature of reading acquisition and the application of current reading research to instruction practice will be emphasized. Topics covered will include theories of reading development; skills-based, holistic, and balanced approaches to reading instruction; the application of empirical research findings to reading

instruction; language basics, including syllables, phonemes and morphemes; concepts of print; letter recognition; phonemic awareness; the alphabetic principle (sound-symbol knowledge); comprehension strategies; the role of the family in reading acquisition; reading attitudes and motivation; and diverse learners. A minimum 15-hour field experience is included.

PSYC 535. The Exceptional Learner (3-3-0)
Prerequisite: Enrollment in the MAT Program or consent of instructor. (Summer, Fall)
This course provides prospective teachers with a basic understanding of special education, its terminology, legal mandates, the etiology and characteristics of exceptionality, and various strategies for educating students with diverse learning needs. Specifically, students are introduced to appropriate educational interventions related to learning disabilities, mental retardation, emotional disturbance, attention-deficit/hyperactivity disorder, autism, developmental delays, speech or language impairment, hearing impairment, visual impairment, physical disabilities, chronic health conditions, traumatic brain injuries, and giftedness.

PSYC 595. Advanced Topics in Psychology (Credit varies)
Prerequisite: Enrollment in the MAT Program or consent of instructor.
Course topics are selected on the basis of faculty and student interests.

PSYC 599. Independent Study (1-6 Credits)
Prerequisite: Enrollment in the MAT Program or consent of instructor.

SOCIOLOGY

SOCL 501. Multiculturalism, Diversity, and Education (3-3-0)
Prerequisite: Enrollment in the MAT Program or consent of instructor. (Spring)
This course addresses the sources and consequences of racial, ethnic, class, and gender diversity in the United States with special attention to the implications for education and the public school system. Topics include bilingual education, the relationships between inequalities of race, ethnicity, and class and education, immigration and the schools, affirmative action, racism, and sexism.

SOCL 595. Advanced Topics in Sociology (Credit varies)
Prerequisite: Enrollment in the MAT Program or consent of instructor.
Course topics are selected on the basis of faculty and student interests.

SOCL 599. Independent Study (1-6 Credits)
Prerequisite: Enrollment in the MAT Program or consent of instructor.

SPANISH

SPAN 538. Apprenticeship in Teaching (3-3-0)
Prerequisite: Enrollment in the MAT Program or consent of instructor. (Fall)
This course introduces prospective teachers to the skills necessary to plan, implement, and evaluate effective lessons in the area of Spanish instruction. In this course, students are assigned to a University professor and work with beginning foreign language students.

SPAN 563. Studies in Cervantes (3-3-0)
Prerequisite: Enrollment in the MAT Program or consent of instructor.(Fall)
Seminar devoted to familiarizing the student with literature by Cervantes and with the historical, cultural and social elements of the Spanish Golden Age. (1500-1680).

SPAN 595. Advanced Topics in Spanish (Credit varies)
Prerequisite: Enrollment in the MAT Program or consent of instructor.
Course topics are selected on the basis of faculty and student interests.

SPAN 599. Independent Study (1-6 Credits)
Prerequisite: Enrollment in the MAT Program or consent of instructor.

TEACHING AND LEARNING

TCHG 516. Curriculum and Instruction (3-3-0)
Prerequisite: Enrollment in the MAT Program or consent of instructor. (Summer)
This course teaches prospective teachers those instructional methodologies which are appropriate to the needs of students. Emphasis is placed on the acquisition of skills essential for teacher decision-making in the areas of instructional planning, lesson design, and delivery of instruction. Special attention is paid to the research on effective instructional strategies. A key requirement of the course is microteaching simulations which are evaluated by the instructor and peers. A minimum 15 hour field experience is scheduled in classroom settings.

TCHG 543. Classroom Management and Discipline (3-3-0)
Prerequisite: Enrollment in the MAT Program or consent of instructor. (Summer)
The course addresses components of successful classroom management, including managing the physical environment, student behavior, instruction and student productivity. A number of discipline models will be presented. Emphasis is on research proven to effect productive classroom behaviors.

TCHG 510. Teaching Internship (6-0-18)
Prerequisite: Enrollment in the MAT program or consent of instructor.(Spring)
A full-time, 12-week clinical teaching experience in the public schools.

TCHG 595. Advanced Topics in Teaching (Credit varies)
Prerequisite: Enrollment in the MAT Program or consent of instructor.
Course topics are selected on the basis of faculty and student interests.

TCHG 599. Independent Study (1-6 Credits)
Prerequisite: Enrollment in the MAT Program or consent of instructor.

THEATER

THEA 546. History of Musical Theater (3-3-0)
Prerequisite: Enrollment in the MAT program or consent of the instructor.
The evolution and variety of the musical theater genre from its melting-pot originals in minstrelsy, operetta, vaudeville and immigrant street song to the distinctly American post-war Broadway musical. Largely shaped by the genius of Gershwin, Kern, Rodgers and Hammerstein, Bernstein, Sondheim and Lloyd Webber, the contemporary musical continues to explore new forms of expression on the world state. This course considers the books and scores of selected musical theater high spots, including *Showboat, Oklahoma, West Side Story Candied, Jesus Christ Superstar and Sweeney Todd*.

THEA 550. Stage Management (3-3-0)
Prerequisite: Enrollment in the MAT program or consent of the instructor.
This highly practical course examines the pivotal role and complex craft of the stage manager in the theater. Students learn the vocabulary, techniques and professional protocols necessary to organize and manage every aspect of theatrical production - from posting the first audition notice to calling the final light cue on closing night. Acquired skills include: organizing production meetings, developing a rehearsal schedule, maintaining a blocking script, running tech rehearsals, and collaborating with the director, designers, actors, crews and house staff.

THEA 561. The One Act Play (3-3-0)
Prerequisite: Enrollment in the MAT program or consent of the instructor.
From the Greeks and Moliere to Chekhov and Mamet, the one-act play, like the short story to the novelist, has offered dramatists a powerful venue for diverse experiment and concentrated theatrical effect. Students encounter seminal examples of short plays by Moliere, Anton Chekov, August Strindbert, Eugene O'Neill, Thornton wilder, Tennessee Williams, Edward Abee, Samuel Beckett, Leroi Jones, Tome Stoppard, Same Shepart and Peter Handke

THEA 568. Playwriting Seminar (3-3-0)
Prerequisite Enrollment in the MAT program or consent of the instructor.
What makes a story a script? What makes a script stageworthy? Building from simple scenarios, scores and situations, students work to develop a playwright's vocabulary of dramatic form and theatrical expression, including principles of structure, action, dialogue, character and spectacle. The seminar culminates in the authorship and revision of original ten-minute one-act plays - with opportunities to mount new works in CNU's Studio Theater. Open to motivated writers of all backgrounds.

THEA 578. Teaching Apprenticeship in Theater Arts (3-3-0)
Prerequisite: Enrollment in the MAT program or consent of the instructor.
This course introduces prospective teachers to the skills necessary to plan, implement, and evaluate effective lessons in the multi-disciplinary art of theater. In this course, students are assigned to a teacher of Theater Arts and work with beginning theater students in the classroom environment.

THEA 595. Advanced Topics in Theater (Credit varies)
Prerequisite: Enrollment in the MAT Program or consent of instructor.
Course topics are selected on the basis of faculty and student interests.

THEA 599. Independent Study (1-6 Credits)
Prerequisite: Enrollment in the MAT Program or consent of instructor.

M.S. IN APPLIED PHYSICS AND COMPUTER SCIENCE

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

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

Dr. David Hibler
Graduate Program Coordinator
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139 Gosnold Hall
(757) 594-7065

Master of Science in Applied Physics and Computer Science

The Master of Science in Applied Physics and Computer Science is built around a core of physics and computer science courses that are the foundation of the three areas of concentration: computer science, computer systems engineering and instrumentation, and applied physics. Students may elect a thesis option or a non-thesis option.

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

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

Five Year Combined BS/MS Programs

The department also has programs leading to a BS and MS in Applied Physics and Computer Science after five years of study. For undergraduate students putting in an extra year to obtain the MS, lifetime earnings and the potential for increased opportunities and job satisfaction can increase significantly. These programs are very flexible and students will still receive the BS in their degree program once they complete the requirements, even if they don't complete the MS program. By taking a total of two to three graduate courses during the junior and senior year and one graduate course during the summer, the MS requirements can be completed in the following year. Interested students should talk to their advisor early in their program since course sequencing is critical to success. To formally enroll in the program requires a GPA of 3.0 or better. Application to these programs should be made by February 1st of the junior year. The ***Application for Admission to 5 Year Graduate Study Program*** is distributed by the Graduate Program Coordinator. Detailed brochures with five-year plans for each concentration are available in the Physics, Computer Science and Engineering departmental office and online at **www.pcs.cnu.edu.**

Admission Requirements for Degree-Seeking Students

1. A baccalaureate degree from a regionally accredited college or university with a minimum grade point average of 3.00 on a 4.00 scale
2. An official transcript from the baccalaureate institution and official transcripts for all graduate work taken at other institutions
3. Three letters of recommendation from people who can attest that the applicant is likely to be able to be successful in graduate level academic work. All recommendations must arrive in unopened envelopes with the reference's signature across the envelope flap.
4. Scores from the Graduate Record Examination (GRE) 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. A GRE score of at least 1000 for Verbal and Quantitative sections combined is highly desirable. For those applicants already holding a master's degree, the GRE may be waived by permission of the Director of Graduate Studies. A letter to the Director of Graduate Studies requesting a waiver is required.
5. International applicants must supply their TOEFL scores and the documentation as stated on page 101 of this catalog.

The Master of Science in Applied Physics and Computer Science is designed to serve students with a baccalaureate degree in applied physics, computer science, electrical and/or computer engineering or mathematics. Students with degrees in other areas are encouraged to apply. Departmental graduate advisors will establish the background courses needed for such students. This program is also designed to serve students who want advanced study in the electronic or optical properties of materials, computer science, computer systems engineering or computer controlled instrumentation.

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

Academic Policy for Non-Degree Students

Students seeking non-degree admission status must have a grade point average of at least 3.0 on a 4.0 scale. Non-degree students are limited to 12 hours of graduate study. Up to 12 credits of graduate study may be applied to the graduate degree should a non-degree student apply and be accepted to degree-seeking status. Should a non-degree student desire additional courses beyond the 12-credit limit, he or she may petition the Graduate 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

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

The special feature of the coursework in the master's degree program is its emphasis on applications, laboratory experience and extensive use of computer software and hardware. All of the courses make extensive use of computers or require significant laboratory experimentation. The thesis preparation seminars for the concentrations, Computer Systems Design (CPSC 619), Instrumentation Systems Design (PHYS 629), Design of Solid State Systems and Sensors (PHYS 639) or Design of Integrated Modeling and Simulation Environments (PHYS 649), tie these elements securely together and are an integral part of the thesis.

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

Thesis Proposal/Comprehensive Oral Examination (Thesis Option)

The culminating requirement for the design course is completion of the thesis proposal. Students not completing the thesis proposal by the end of the design course will receive a grade of **U**. **Students will have two chances to pass the thesis proposal.** If the student is not successful the second time, the student will receive a **F** for the design course and will be suspended from the graduate program.

Comprehensive Examination (Non-Thesis Option)

A written comprehensive examination is required, covering the concentration courses. A student failing the comprehensive examination may request a re-examination within six months of the failure. Only one additional examination is permitted after the failure of the original comprehensive examination.

Memorandum of Understanding

Christopher Newport University has a memorandum of understanding with Longwood College for a dual degree program leading to a B.S. in Physics from Longwood College and a M.S. in Applied Physics and Computer Science from CNU. Contact the program coordinator at **dhibler@pcs.cnu.edu** (757-594-7065) for information.

Graduate Certificate Programs

In addition to the M.S. degree, the department offers three graduate certificate programs. A student can receive a certificate in networked systems, software development and design or applied artificial intelligence. Each program consists of three courses. All courses are offered in the evening. For more information contact the Physics, Computer Science, and Engineering Department at 757-594-7065 or at **phone@pcs.cnu.edu**.

Graduation Requirements

Thesis Option

- Successful completion of 30 hours of the M.S. in Applied Physics and Computer Science degree program course work
- An overall graduate grade point average of 3.00 in all CNU courses submitted for graduate credit with no more than two grades of ***C***
- Registration and timely petition for candidacy prior to the final semester
- Successful completion of the thesis proposal/comprehensive oral examination
- Successful defense of thesis and presentation of the appropriate number of approved copies to the Graduate Studies Office by the published deadline
- Presentation of an electronic copy of the thesis in a suitable format to the department for archive purposes only

Non-Thesis Option

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

Graduate Assistantships

Screening of applicants wishing to be considered for assistantships will begin on May 1 for the following fall semester. See page 119 of the catalog for specific terms, criteria and procedures. Applications are available on the department's web site: **http://www.pcs.cnu.edu**

For further information:

Contact the APCS Graduate Program Coordinator at **(757) 594-7065 or dhibler@pcs.cnu.edu or http://www.pcs.cnu.edu**

COMPUTER SCIENCE CONCENTRATION

Academic Prerequisites

All applicants should have completed a three-semester sequence in mathematics including at least two semesters of calculus and programming including data structures. It is assumed that these courses are at least at the level of the following texts: Anton, *Calculus*; Headington and Riley, *Data Abstraction and Structures Using C++*; Aho, Hopcroft and Ullman, *Data Structures*; Mano, *Computer Engineering*. Students who do not have all prerequisites may, in some cases, be allowed to take a graduate independent study course to develop the necessary background for further graduate work.

Computer Science Concentration
Program of Study 30-36 Credits

Core Courses (12 credits)

Select any four courses from the following list:

CPSC 501	Software System Design and Implementation (3)
CPSC 502	Communications I (Computer Networks) (3)
CPSC 510	Artificial Intelligence I (3)
CPSC 521	Computer Architecture (3)
CPSC 550	Distributed Operating Systems (3)

Concentration Courses (12 credits)

Select any four courses meeting the following requirements:

1. All courses must be from the M.S. in Applied Physics and Computer Science program.
2. At least two of the courses must be 600 level courses.
3. Completion of a second course in at least one of the following sequences.

Each sequence prepares a student for a possible thesis in a given area.

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)

Software Engineering Emphasis

CPSC 501	Software System Design and Implementation (3) (Core Course)
CPSC 525	Object Oriented Programming and Design (3)

Design Course (Thesis Preparation) and Thesis (6 credits)

CPSC 619	Computer System Design (3) Students in the design courses are required to attend all theses proposals and defenses that occur during the course.
PCSE 699	Thesis Research (3) Can be taken only upon successful completion of CPSC 619 design course. Thesis may be taken in one-credit increments.

OR

Non-Thesis Option (12 credits)

12 credit hours of electives from the M.S. in Applied Physics and Computer program

Total **30 credits** (Thesis) **OR** **36 credits** (Non-Thesis)

COMPUTER SYSTEMS ENGINEERING AND INSTRUMENTATION CONCENTRATION

Academic Prerequisites

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

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

Core Courses (12 credits)

PHYS 521	Computer Architecture (3)
CPSC 501	Software System Design and Implementation (3)
CPSC 502	Communications I (Computer Networks) (3)
CPSC/PHYS	Any course listed in the Applied Physics core

Concentration Courses (12 credits)

Select any four courses from the following list: (at least two must be 600 level)

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

Design Course (Thesis Preparation) and Thesis (6 credits)

PHYS 629 Instrumentation Systems Design (3) **OR** CPSC 619 Computer System Design (3)
Students in the design courses are required to attend all theses proposals and defenses that occur during the course.

AND

PCSE 699 Thesis Research (3)
Can be taken only upon successful completion of PHYS 629 **or** CPSC 619 design course. Thesis may be taken in one credit increments.

OR

Non-Thesis Option (12 credits)

12 credit hours of electives from the M.S. in Applied Physics and Computer program

Total **30 credits** (Thesis) **OR** **36 credits** (Non-thesis)

APPLIED PHYSICS CONCENTRATION

Special Features of the Concentration

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

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

Academic Prerequisites

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

Applied Physics Concentration
Program of Study 30-36 Credits

Core Courses (12 credits)

PHYS 501 Models of Dynamical Systems (3)
PHYS 503 Data Acquisition and Instrumentation (3)
PHYS 504 Electromagnetic Theory (3)
PHYS 541 Modeling and Simulation (3)

Concentration Courses (12 credits)

Select any four courses from the following list:
PHYS 502 Quantum Physics (3)
PHYS 506 Thermodynamics and Statistical Physics (3)
PHYS 531 Optical Physics (3)
PHYS 634 Solid State Materials and Devices (3)
MATH 580 Advanced Numerical Analysis (3)

Design Course (Thesis Preparation) and Thesis (6 credits)

PHYS 639 Design of Solid State Systems and Sensors (3) **OR**
PHYS 649 Design of Integrated Modeling and Simulation Environments (3)
Students in these courses are required to attend all theses proposals and defenses that occur during the course.

AND

PCSE 699 Thesis Research (3)
Can be taken only upon successful completion of PHYS 639 or PHYS 649 design course. Thesis may be taken in one-credit increments.

OR

Non-Thesis Option (12 credits)

12 credit hours of electives from the M.S. in Applied Physics and Computer program.

Total **30 credits** (Thesis Option) **OR** **36 credits** (Non Thesis Option)

Five Year BS/MS Program
in Applied Physics and Computer Science

This five-year program leads to both a Bachelor of Science and a Master of Science in Applied Physics and Computer Science. The Master of Science curriculum has concentrations in Computer Science, Computer Systems Engineering and Instrumentation, and Applied Physics that correspond to the undergraduate majors of Computer Science, Computer Engineering, and Applied Physics. By putting in an extra year to obtain the MS, lifetime earnings and the potential for diverse opportunities and job satisfaction increase significantly.

Admission and Program Requirements

1) Criteria for student admission into a five-year program:
   a) Undergraduate cumulative GPA of 3.0 or higher.
   b) GPA in the student's major of at least 3.0.
   c) Submit one of the following:
      i) A minimum SAT Score of 1100; **OR**
      ii) A Graduate Record Examination (GRE) General Test scores with combined score of 950 for Verbal and Quantitative sections. A score of 1000 or above is highly desirable. The GRE scores are used as one of several indicators of the applicant's ability to succeed in graduate studies.
   d) Two letters of recommendation. One must be from a faculty member in the major who has taught the student in a major course.
   e) A program of study for the five-year program approved by the student's advisor. A maximum of six credit hours on the program of study may be designated "special credit."

2) Students apply for admission to a five-year program by February 1st of the junior year.

3) To continue in the five-year program a student must maintain a 3.0 GPA.

4) Undergraduate students taking graduate courses pay graduate tuition for enrollment in the graduate courses.

5) Upon completion of the normal requirements in their respective undergraduate programs, a baccalaureate degree will be awarded to the students.

6) Special credit hours are subject to the following requirements:
   a) A maximum of six hours of special credit will be allowed.
   b) Special credit courses shall consist of cross-listed undergraduate/graduate courses that are approved by the student's advisor.
   c) The student will register for these courses as a graduate student.
   d) The student will be held to the same standards in these classes as any other graduate student.
   e) Special credit hours will count towards the 120 hours required for an undergraduate degree. They will not directly count toward the MS.
   f) Special credit courses will count toward the student's major requirements for BS in Physics, Information Science, Computer Science, or Computer Engineering in exactly the same way that the corresponding cross-listed undergraduate course would count.

7) Students will be allowed to take a maximum of four courses at the graduate level before receiving their BS. This includes special credit courses.

8) Students in the five-year program will be required to take a total of 24 graduate hours for the thesis track and 30 hours for the non thesis track. This does not count special credit hours.

Example Program of Study

Year 1

Fall		Hrs.	Spring		Hrs
CPSC 125	Major	3	CPSC 150/150L	Major	4
MATH 140	Major	4	MATH 240	Major	4
ENGL 101	Gen Ed	3	ENGL 102	Gen Ed	3
HIST 111B	Gen. Ed.	3	HIST 112G	Gen. Ed.	3
For. Lang. (1)	Gen. Ed.	3	For. Lang. (2)	Gen. Ed.	3
		16			17

Year 2

Fall		Hrs.	Spring		Hrs
CPSC 250/250L	Major	4	CPSC 270	Major	3
MATH 125	Major	3	ENGR 213	Major	3
PHYS. 201/201	Gen. Ed.	4	PHYS 202/202L	Gen. Ed	4
Hum./SS (1)	Gen. Ed.	3	Hum./SS(2)	Gen. Ed.	3
			COMM 201	Gen. Ed.	3
		14			16

Year 3

Fall		Hrs.	Spring		Hrs
CPSC 260	Major	3	CPSC 330	Major	3
CPEN 214	Major	3	MATH 235 or 260	Major	3
Sci. (1) + Lab	Gen. Ed.	4	Sci. (2)	Gen. Ed	3
Hum./SS (3)	Gen. Ed.	3	Hum./SS(4)	Gen. Ed	3
LSPE	Gen. Ed.	2	CPEN 371	Major	1
			Elective		3
		15			16

Year 4

Fall		Hrs.	Spring		Hrs
CPSC 410	Major	3	CPSC 550	Major	3
CPSC 501	Grad	3	CPSC 420	Major	3
CPSC Elective	Major.	3	Elective		3
CPSC 525	Major	3	Elective		3
Elective		3	Elective		3
		15			15

BS/CS 115 undergraduate hours+ 6 special credit = 121 hours toward BS *(CPSC 525 and 550 are taken for special credit. They fulfill the same major requirements as cross-listed CPSC 425 and 450.)*

3 graduate hours *not special credit.* ***124 hours total.***

Summer		Hrs
CPSC 502	Grad	3

Year 5

Fall		Hrs.	Spring		Hrs
CPSC 510	Grad	3	CPSC 560	Grad	3
CPSC 611	Grad	3	CPSC 642	Grad	3
CPSC 619	Grad	3	PCSE 699	Grad	3
		9			9

MS 24 graduate hours.

M.S.IN APPLIED PHYSICS AND COMPUTER SCIENCE COURSES OF INSTRUCTION

PHYSICS

PHYS 501. Models of Dynamical Systems (3-3-0)
Prerequisites: Math through differential equations and graduate standing in the department or permission of the instructor. Fall.
The classical models of physical phenomena, the modern perspective on their analytic and qualitative solutions and the insights that numerical analysis of the models gives to expected behaviors of dynamical systems. Computer analysis and graphical representation of solutions for regular and chaotic dynamical systems.

PHYS 502. Quantum Physics (3-3-0)
Prerequisites: PHYS 501 and graduate standing within the department or permission of instructor. Odd Spring.
Study of the formulation of quantum physics and the use of computers to analyze quantum mechanical systems. Topics include the postulates of quantum physics, the Shroedinger equation, indeterminacy, the Heisenberg representation, angular momentum, internal degrees of freedom, the hydrogen atom, perturbation theory, quantization of the EM field and radiative transitions.

PHYS 503. Data Acquisition and Instrumentation (3-3-0)
Prerequisites: Graduate standing within the department or permission of instructor. Fall.
Data reduction and error analysis. Computer-controlled data acquisition systems in the laboratory. The use of a case study to develop a measurement system. Noise in electronic systems. Introduction to signal processing. Students are required to complete a project that includes an implementation of a measurement system and data reduction of the results.

PHYS 504. Electromagnetic Theory (3-3-0)
Prerequisites: PHYS 304 or MATH 350; graduate standing within the department or permission of instructor. Even Spring.
Review of electrostatics and magnetostatics. Maxwell's equations and time varying fields: wave propagation and polarization, waveguides and cavities and radiating systems. Computer programs for the solution of problems will be emphasized.

PHYS 506. Thermodynamics and Statistical Physics (3-3-0)
Prerequisites: Graduate standing within the department or permission of instructor. Spring.
Review of thermodynamics followed by advanced topics in thermodynamics: first-order phase transitions, maximum work theorem, Legendre transformations, critical phenomena and irreversible thermodynamics. Statistical mechanics: entropy representation, microcanonical, canonical, grand canonical formalisms, quantum fluids and fluctuations. Use of the computer in the analysis and presentation of technical problems.

PHYS 521. Computer Architecture (3-3-0)
Prerequisites: Graduate standing within the department or permission of instructor. Spring.
Advanced issues and techniques in computer architecture and design. Instruction set design and performance impact. Architectural simulation using VERILOG. Pipelining. Computer arithmetic and vector processors. Advanced memory and cache design. I/O interfaces for high performance.

PHYS 522. Microprocessor-based Systems (3-3-0)
Prerequisites: Graduate standing in the department or permission of the instructor. Spring.
Focus on microprocessor-based computer architectures. Hardware topics include studies of several microprocessor architectures, memory, peripheral interfaces and buses. Software issues include I/O and interrupt handling and microprocessor development systems.

PHYS 523. Computer Architecture, Advanced Topics (1-1-0)
Prerequisites: ENGR 414 or equivalent. Spring.
A one-credit course in advanced computer architecture for students with a solid undergraduate background in the topic. Students may not take both PHYS 521 and 523.

PHYS 524. Microprocessor-based Systems, Adv. Topics (1-1-0)
Prerequisites: PHYS 422 or equivalent. Spring.
A one-credit course in advanced microprocessor-based systems for students with a solid undergraduate background in the topic. Students may not take both PHYS 522 and 524.

PHYS 531. Optical Physics (3-3-0)
Prerequisites: Graduate standing in the department or permission of the instructor. Odd Fall.
This course lays the foundation of modern optical science. It presents an overview of the properties of light and its interaction with matter and describes basic principles for control and detection of light beams. Provides an introduction to optical spectroscopy. The use of computer software for optical analysis is emphasized.

PHYS 541. Modeling and Simulation (3-3-0)
Prerequisites: PHYS 501, PHYS 502, MATH 580, CPSC 501, C or FORTRAN 90. Even Fall.
The modeling and simulation of physical systems. Applying software methodologies to the solution of physical problems. Lectures typically involve a short review of a physics topic such as Keplerian motion, followed by an extensive discussion on the modeling and/or simulation of the problem. A large component of the course is a project. Students are able to "design" their own project, drawing from any area in the complete spectrum of physics curriculum. The project might entail modeling physical systems (ex: mechanics, optics, fluids, waveguides, atmospheric propagation or nonlinear system). Or, the student may choose to write a stimulation (ex: interplanetary spaceflight, orbital adjustment and insertion or powered flight). **Substantive, additional work in the form of more advanced assignments and projects are required to distinguish this class from the cross-listed undergraduate class.**

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 hrs of program requirements & have chosen a thesis advisor.
This advanced instrumentation systems course is directed at understanding a comprehensive systems problem and formulating a design approach based on sound computer engineering principles. This course is a precursor to the student's thesis work in computer systems engineering and instrumentation concentration. Students select computer system research areas and formulate problem solving approaches under instructor supervision. Background research, trade-off studies and alternative implementations are explored. Each student presents a thesis proposal and is examined orally on topics related to his or her proposal. During this thesis proposal/oral comprehensive exam, students must demonstrate a basic knowledge in areas related to their proposed thesis to receive a passing grade. Students in this course are required to attend all Thesis Proposal Presentations and all Thesis Defense Presentations that occur during the course.

PHYS 631. Physics of Solids (3-3-0)
Prerequisites: PHYS 502 and PHYS 506 or permission of instructor. Odd Fall.
Introduction to the physics of solids at the graduate level. Quantum ideas are emphasized to provide a better understanding of the properties of solids. Topics include crystal structure, electrons in a periodic potential, Fermi surface and band theory, lattice dynamics, phonons, semiconductors and magnetism.

PHYS 632. Lasers and Photonics (3-3-0)
Prerequisites: PHYS 631.
This course provides a survey of fundamental optical properties of matter and how they are employed in modern optical devices. The course focuses on laser physics and the varied use of lasers in meteorology. Includes a discussion of optical fibers for use in communications and sensors.

PHYS 634. Solid State Materials and Devices (3-3-0)
Introduction to theory of the solid state. Application of the theory to describe the behavior of solid state materials such as superconductors and optical elements that form the building blocks of devices. Overview of applications of these devices. Laboratory experimentation.

PHYS 639. Design of Solid State Systems & Sensors (3-3-0)
Prerequisite: Completion of 12-15 hours of program requirements and have chosen a thesis advisor.
A design course to integrate knowledge acquired in the solid state program into a research/design effort. Each student presents a thesis proposal and is examined orally on topics related to his or her proposal. During this thesis proposal/oral comprehensive exam students must demonstrate a basic knowledge in areas related to their proposed thesis to receive a passing grade. Students in this course are required to attend all theses proposals and all defenses of thesis that occur during the course.

PHYS 649. Design of Integrated Modeling and Simulation Environments (3-3-0)
Prerequisite: PHYS 631, completion of 12-15 hours of program requirements and have chosen a thesis advisor.
Conceptualize, design, develop and test an integrated computational environment suitable for the modeling and simulation of systems and the appropriate presentation of the results. Each student presents a thesis proposal and is examined orally on topics related to his or her proposal. During this Thesis Proposal Presentation 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 Defense Presentations which occur during the course.

PCSE 699. Thesis Research (3 Credits)
Prerequisite: Successful completion of CPSC 619, or PHYS 629, or PHYS 639, or PHYS 649.
Students in this course are required to attend all thesis proposals and defenses that occur during the course.

COMPUTER SCIENCE

CPSC 501. Software System Design & Implementation (3-3-0)
Prerequisites: Graduate standing or permission of the instructor. Fall.
The management, specification, design, implementation and documentation of complex software systems. A paper or class presentation based on independent reading of research papers concerning new developments in software engineering are required. Students are expected to learn to use software systems such as CASE tools.

CPSC 502. Communications I (3-3-0)
Prerequisites: Graduate standing and ability to program in C or C++, or permission of the instructor. Summer
A comprehensive view of data communications with an emphasis on computer networks. Baseband and broadband local area networks, OSI model, logical link protocols, media with an emphasis on fiber-based interfaces, topology and routing/flow control. TCP/IP protocols and socket-based application development are emphasized.

CPSC 510. Artificial Intelligence I (3-3-0)
Prerequisites: Graduate standing within the department. Fall
The purpose of this course is to introduce students to the basic elements of artificial intelligence with an emphasis on applications such as neural nets and heuristic search.

CPSC 521. Computer Architecture (3-3-0)
Prerequisites: Graduate standing within the department or permission of instructor. Spring.
Advanced issues and techniques in computer architecture and design. Instruction set design and performance impact. Architectural simulation using VERILOG. Pipelining. Computer arithmetic and vector processors. Advanced memory and cache design. I/O interfaces for high performance.

CPSC 525. Object Oriented Programming & Design (3-3-0)
Prerequisites: Graduate standing or permission of the instructor. Spring.
Basic object-oriented design and applications. This course introduces object-oriented design methods and provides guidance in the effective implementation of object oriented programs. Substantive, additional work in the form of more advanced assignments and projects are required to distinguish this class from the cross-listed undergraduate course.

CPSC 550. Distributed Operating Systems (3-3-0)
Prerequisites: Graduate standing within the department. Spring.
A study of operating systems with emphasis on distributed systems and intra-system communications. Substantive, additional work in the form of more advanced assignments and projects are required to distinguish this class from the cross-listed undergraduate course.

CPSC 560. Introduction to Compilers (3-3-0) *Spring*
A study of the problems of translating procedure oriented languages; lexicographic analysis, syntax checking, code generation and optimization, error detection and diagnostics. Substantive, additional work in the form of more advanced assignments and projects are required to distinguish this class from the cross-listed undergraduate course.

CPSC 570. Theoretical Computer Science (3-3-0)
Prerequisites: Graduate standing within the department. Fall.
Presentation of basic results relating to formal models of computation. Emphasis is placed on developing skills in understanding rigorous definitions in computing and in determining their logical consequences. Substantive, additional work in the form of more advanced assignments and projects are required to distinguish this class from the cross-listed undergraduate course.

CPSC 585. Principles & Applications of Multimedia (3-3-0)
Prerequisites: Graduate standing with the department. Fall.
The purpose of this course is to learn the principles and techniques of multimedia, focusing on digital images and audio in print and online form. Technical topics include the nature of sound and images and their digital representation and multimedia relevant web protocols. The course will also address copyright issues, graphic design and human interface principles. A semester project is required.

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

CPSC 599. Independent Study. 1-4 Credits.

CPSC 611. Communications II (3-3-0)
Prerequisite: CPSC 502. Fall
Analysis of communication systems through the application of queuing theory results and the modeling and simulation of these systems by state-of-the-art network simulation tools. Client/server network software strategies with an emphasis on RPC.

CPSC 619. Computer Systems Design (3-3-0)
Prerequisites: Completion of 12-15 hours of program requirements and have chosen a thesis advisor.
A design course to integrate knowledge acquired in the program into a research/design effort and to serve as a structure for beginning the research/design effort. Each student presents a thesis proposal and is examined orally on topics related to his or her proposal. During this thesis proposal/oral comprehensive exam, students must demonstrate a basic knowledge in areas related to their proposed thesis to receive a passing grade. Students in this course are required to attend all thesis proposal presentations and all thesis defense presentations that occur during the course.

CPSC 621. Parallel Processing (3-3-0)
Prerequisite: CPSC 521 or 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.

CPSC 681. Principles and Applications of Image Processing (3-3-0)
Prerequisites: CPSC 585, and CPSC 510, or permission of the instructor. Odd Spring.
The purpose of this course is to learn the principles and techniques of digital image processing and computer vision. Technical topics include: image fundamental, image enhancement in the spatial and frequence domains, restoration, color image processing, wavelets, image compression, morphology, segmentation, image description, and the fundamentals of object recognition. The course will also address image processing in Java and image processing library in C++. A semester proposal is required.

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 Environmental Science

The Master of Science in Environmental Science is an applied program designed to meet the needs of a wide variety of students, including those already working in the environmental field or those just completing their baccalaureate education. Both thesis and non-thesis options are available as well as a Five Year BS/MS Program. Evening classes are offered; some labs are available on weekends.

The Department of Biology, Chemistry, and Environmental Science is actively engaged in research projects and in teaching a full complement of course work. We encourage student involvement in our applied and basic research and enjoy guiding students through their own particular areas of research interest. Located in the environmentally rich coastal plain of Virginia, we have access to a variety of excellent field research sites. The department conducts research at ecological study sites in rural Gloucester County, Hoffler Creek Nature Preserve in Portsmouth, the Great Dismal Swamp, a forestry research area in New Kent County, and aquatic research at Lake Maury close to our campus.

All course offerings are taught in the modern 16,000 square foot science building containing 14 well-equipped laboratories and 23 support areas. Three walk-in controlled environment chambers, a greenhouse, and a fleet of boats complement the facilities. Additional laboratory research space is available at the nearby Applied Research Center.

Dr. Gary Whiting
Graduate Program Coordinator
gwhiting@cnu.edu
217 Science Building
(757) 594-7613

Master of Science in Environmental Science

The Master of Science in Environmental Science has been designed in conjunction with area businesses and government agencies to provide the knowledge and technical skills needed for employment and advancement in the field of environmental monitoring and assessment. This program is flexible enough to fit the interests and needs of a wide variety of students and is designed for students planning to pursue a Ph.D., teachers wanting a M.S. in a biological science, or students interested in careers with private environmental companies or government agencies.

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

Admission Requirements for Degree-seeking Students

1. A baccalaureate degree from a regionally accredited college or university with a minimum grade point average of 3.00 on a 4.00 scale
2. An official transcript from the baccalaureate institution, and official transcripts for all graduate work taken at other institutions
3. Three letters of recommendation from people who can attest that the applicant is likely to be 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. Graduate Record Examination (GRE) score at or above 950 cumulative on the Verbal and Quantitative sections is preferred. GRE scores are used as one of several indicators of the applicant's ability to succeed in graduate studies. For applicants already holding a master’s degree, the GRE may be waived by permission of the Director of Graduate Studies. A letter to the Director of Graduate Studies requesting a waiver is required.

Academic Policy for Non-degree Students

Students seeking non-degree admission status must have a grade point average of at least 3.0 on a 4.0 scale. Non-degree students are limited to 12 hours of graduate study. Up to 12 credits of graduate study may be applied to the graduate degree should a non-degree student apply and be accepted to degree-seeking status. Should a non-degree student desire additional courses beyond the 12-credit limit, he or she may petition the Graduate Program Coordinator for a waiver of this limit. Non-degree seeking students must meet the prerequisites before enrolling in a graduate course or obtain the consent of the instructor.

Academic Prerequisites

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

Goals of the Program

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

1. Solid background in ecological and environmental conservation theory
2. Skills required for employment with environmental assessment/monitoring businesses, and state and federal governmental agencies
3. Research and technical writing skills
4. Preparation for further graduate work

Curriculum

The Master of Science in Environmental Science degree program consists of thesis or non-thesis options. Many courses feature a prominent laboratory or field component in order to teach analytical and practical skills, while other courses are designed to build research and technical writing skills. The remainder of the course offerings is designed to enhance the understanding of ecology and the natural history of organisms. Many of the courses involve, or consist entirely of, fieldwork since employers are seeking graduates with first-hand knowledge of the environment and environmental assessment methods. Late afternoon and evening courses are available. Most courses beyond the core courses may be taken in any sequence.

Thesis Option

The thesis option is a 33-hour program that requires 10 hours of core courses, 17 hours of concentration courses (chosen with the guidance of the student's advisor and thesis committee), and 6 hours of thesis research. An oral presentation and defense of the written thesis are required.

Non-Thesis Option

The non-thesis option is a 36 hour program which consists of 10 hours of core courses, 23 hours of concentration courses designed with the guidance of the student's advisor and committee, and 3 hours of project research. Non-thesis project research, typically limited in scope and with a reduced time demand than the thesis, will be designed under the supervision of the advisor and committee. An oral report and written report of the completed project are required.

Graduation Requirements

Thesis Option

- Successful completion of 27 hours (minimum) of the M.S. in Environmental Science degree program course work and 6 hours of thesis (ENVS 699)
- Cumulative graduate grade point average of 3.00 in all CNU courses submitted for graduate credit with no more that 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 Office of Graduate Studies by the published deadline
- Presentation of an electronic copy of the thesis to the chair of the committee in an acrobat.pdf format on CD suitable for archive purposes only

Non-Thesis Option

- Successful completion of 33 hours (minimum) of the M.S. in Environmental Science degree program course work and 3 hours of non-thesis project (ENVS 599)
- Cumulative graduate grade point average of 3.00 in all CNU courses submitted for graduate credit with no more that two grades of ***C***
- Registration and timely petition for candidacy prior to the final semester
- Successful completion of the comprehensive examination
- Oral presentation and written copy of project to advisor and committee
- Presentation of an electronic copy of project to the chair of the committee in an acrobat.pdf format on CD suitable for archive purposes only

Internships and Graduate Assistantships

Graduate assistants are employed to conduct research, perform administrative activities, and/or teach as directed by the graduate faculty within the department. The position requires a weekly time commitment and is awarded on a competitive basis. To qualify, a student must be a degree-seeking student with no limits or provisions, be enrolled in 6-9 graduate credit hours in the semester of the award. Internships with environmental departments of municipalities, resource agencies, laboratories, and engineering firms are available. The student gains practical experience in a work place environment learning detailed methods of site evaluation, environmental assessment and technical report preparation. Many of the internships offer financial support to the student.

For Further Information

Information may be obtained from the Graduate Program Coordinator, Dr. Gary Whiting, or online at: **http://www.cnu.edu/bces/MSEnvironmentalScience.html** or **http://www.cnu.edu/gradstudies.**

Master of Science in Environmental Science
Program of Study 33-36 Credits

Core Courses (10 credits)

ENVS 505	Technical and Scientific Writing (2)
ENVS 510/510L	Biometry & Biometry Laboratory (5)
ENVS 518	Biological Conservation: Theory and Practice (3)
OR	
ENVS 519	Restoration Ecology (3)

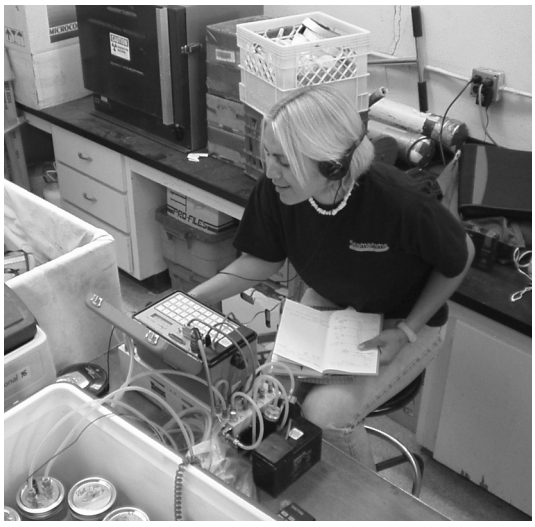
Concentration Courses (17 credits for Thesis Option **OR 23 credits** for Non-Thesis Option**)**

ENVS 530	Biogeography (3)
ENVS 534	Marine Ecology (4)
ENVS 538	Limnology & Aquatic Biology (4)
CHEM 545	Instrumental Methods in Chemistry (4)
CHEM 555	Environmental Instrumental Analysis (1)
CHEM 585	Advanced Instrumental Analysis (1)
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 590	Topical Seminars in Environmental Science (1-4cr.)

Thesis or Project (6 credits for Thesis Option **OR 3 credits** for Non-Thesis Option**)**

ENVS 699	Thesis Research (Thesis) (6)
ENVS 599	Project Research (Non-thesis) (3)

TOTAL **33 credits** (Thesis) **OR** **36 credits** (Non-Thesis)



Five Year BS/MS Program in Environmental Science

The Master of Science in Environmental Science is designed for current and prospective students in the new, rapidly growing field of environmental monitoring and conservation. This five-year program leads to both a Bachelor of Science and a Master of Science in Environmental Science and provides a solid background in ecological and environmental conservation theory. Students also develop skills required for employment with environmental assessment/monitoring businesses and state governmental agencies.

This degree program is flexible enough to fit the interests and needs of a wide variety of students and is designed for students planning to pursue a Ph.D., teachers wanting a Master of Science in a biological science, or students interested in careers with governmental agencies.

HOW AND WHEN TO APPLY

After completion of at least 45 hours of undergraduate study, preferably near the middle of the sophomore year, complete the Statement of Intent to participate in the five year BS/MS program. In this Statement, the student and their undergraduate advisor design a tentative five-year schedule and discuss the objectives and requirements of the program. This form is distributed by the Graduate Program Coordinator and/or the Department Chairman.

After completion of 75 hours of undergraduate study (junior level standing), the formal Application to the Five Year BS/MS Program is submitted by Feb. 1 of the Spring semester. The ***Application for Admission to 5 Year Graduate Study Program*** is distributed by the Graduate Program Coordinator and/or the Department Chairman. Approval of your application will constitute admission to the MS Program.

1) Criteria for student admission into a five-year program:
   a) Formal application submitted by February 1st of the junior year.
   b) Undergraduate cumulative GPA of 3.0 or higher.
   c) GPA in the student's major of at least 3.0.
   d) Submit one of the following:
      i) A minimum SAT Score of 1100; **OR**
      ii) A Graduate Record Examination (GRE) General Test scores with combined score of 950 for Verbal and Quantitative sections. A score of 1000 or above is highly desirable. The GRE scores are used as one of several indicators of the applicant's ability to succeed in graduate studies.
   e) Two letters of recommendation from a faculty member in the major who has taught/or mentored the student in a major course or research project.
   f) A Program of Study for the five-year program approved by the student's MS advisor. A maximum of six credit hours in the program of study may be designated "special credit".

2) Special credit hours are subject to the following requirements:
   a) A maximum of six hours of special credit will be allowed.
   b) Special credit courses shall consist of cross-listed undergraduate/graduate courses that are approved by the student's MS advisor.
   c) The student will register for these courses as a graduate student.
   d) The student will be held to the same standards in these classes as any other graduate student.
   e) Special credit hours will count towards the 120 hours required for an undergraduate degree. They will not directly count toward the MS.
   f) Special credit courses will count toward the student's major requirements for BS in Environmental Science or Biology in exactly the same way that the corresponding cross-listed undergraduate course would count.

3) Continuation in the five-year program is dependent on a student maintaining a 3.0 GPA.

4) Undergraduate students taking graduate courses pay graduate tuition for enrollment in the graduate courses.

5) Upon completion of the normal requirements in their respective undergraduate programs, a baccalaureate degree (BS) will be awarded to the students.

6) Students will be allowed to take a maximum of four courses at the graduate level before receiving their BS. This includes special credit courses.

7) Students in the five-year program will be required to take a total of 27 graduate hours for the thesis track (this is in addition to the 6 special (graduate) credit hours taken as an undergraduate).

Suggested Course Schedule for Five-Year Program in Environmental Science:

FRESHMAN YEAR

Fall		Spring	
CHEM 121/121L - General Chemistry w/Lab	5	CHEM 122/122L - General Chemistry w/Lab	5
BIOL 107 - General Biology I	3	BIOL108 - General Biology II	3
BIOL 109 - General Biology Lab	1	Humanity	3
ENGL 123	3	Social Science	3
Social Science	3	MATH 125 - Elementary Statistics	3
Credit hours	15	Credit hours	17

SOPHOMORE YEAR

Fall		Spring	
CHEM 321/321L - Organic Chemistry w/Lab	5	CHEM 322/322L - Organic Chemistry w/Lab	5
BIOL300W - General Biology III for majors	3	BIOL 313 - Genetics	3
Social Science	3	Humanity	3
ENGL 223 - Second Yr. Writing Seminar	3	COMM 201- Public Speaking **OR**	3
MATH 130 - Elem. Functions & Analy. Geometry	3	PHIL 101 - Critical Thinking	
Credit hours	17	Credit hours	14
		After Completion of 45 Credit Hours:	
		Submit a Statement of Intent	

JUNIOR YEAR

Fall		Spring	
BIOL306/306L - Environ.Conservation w/Lab	4	BIOL 302/302L - Oceanography w/Lab	4
BIOL 307/307L - Cell Biology w/Lab	4	A Botany Course w/Lab	4
HIST 111G - History of World Civil. to mid 16th Cen.	3	HIST112G -History of World Civil. since mid 16th Cen.	3
PHYS 151/151L - Intermediate Physics w/Lab	4	PHYS 152/152L Intermediate Physics w/Lab	4
Credit hours	15	Credit hours	15
After Completion of 75 Credit Hours:		***After Completion of 90 Credit Hours:***	
Submit formal Application to the 5 Year Program		*Take GRE Exam*	
		Submit formal Application for Candidacy to MS Program	

SENIOR YEAR

Fall		Spring	
BIOL 301/301L - Microbiology w/Lab	4	BIOL403/403L - Marine Biology w/Lab	4
BIOL 491W - Biology Seminar for Majors	1	Biology Elective	4
BIOL 407/407L - General Ecology w/ Lab	4	Biology Elective	4
ENVS 518 - Biological Conservation **OR**	3	ENVS 505 - Technical and Scientific Writing	2
ENVS 519 - Restoration Ecology		ENVS 699 -Thesis	1
Credit hours	12	Credit hours	15

FIFTH YEAR

Fall		Spring	
BIOL 510/510L - Biometry w/Lab	5	Graduate Elective	3-4
Graduate Elective	3-4	Graduate Elective	3-4
Graduate Elective	3-4	Graduate Elective	3-4
ENVS 699 - Thesis	1	ENVS 699 - Thesis	1
Credit hours	12-14	Credit hours	10-13

FIFTH YEAR

Summer	
ENVS 699 - Thesis	2
Comprehensive Exam, Thesis Defense	
Credit hours	2

This is for reference only and does not supersede the current CNU Undergraduate or Graduate Catalog.

M.S. IN ENVIRONMENTAL SCIENCE
COURSES OF INSTRUCTION

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 510. Biometry (3-3-0)
The application of statistical methods to biological problems. Experimental design, data acquisition, single and multiple analysis of variance, regression and correlation are covered. Test selection and modeling are also included.

ENVS 510L. Biometry Laboratory (2-0-3)
Corequisite: ENVS 510.
Develops skills in the use of statistical software packages including relational databases.

ENVS 518. Biological Conservation: Theory and Practice (3-3-0)
Biological conservation is a relatively new, applied discipline having more ethical and sociopolitical ramifications than is typical of non-medical scientific disciplines. This course covers the development of conservation theory, biodiversity and problems of determining and evaluating biodiversity, relevant ecological principles, and ethical and economic issues. The course considers current conservation problems and the methods and strategies. The first part of the course is in lecture format and the second part is in seminar format.

ENVS 519. Restoration Ecology (3-3-0)
This course familiarizes the student with the newly emerging science of restoration ecology, including its theoretical foundation and its application in today's world. The first part of the course concerns case studies and the second part of the course, in seminar format, concerns recently published studies found in the peer-reviewed literature.

ENVS 522. Summer Field Studies (2-0-2)
A one-week field camp in selected habitats emphasizing application of field data gathering and processing techniques to the solving of multifaceted environmental problems. Travel, camping and boat work required. An additional day on campus is required for student presentations.

ENVS 525. Environmental Regulations (3-3-0)
A seminar designed to explore current environmental regulations and their impact on various constituents.

ENVS 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.

ENVS 532. Wetlands Ecology (4-3-0)
A study of the structure and function of wetland systems from salt to fresh and tropical to the arctic. Concepts will cover hydrology, biogeochemistry, wetland development and succession. Wetland delineation, management, creation and restoration apply these concepts.

ENVS 532L. Wetlands Ecology Laboratory (0-0-4)
Corerequisite: ENVS 532
Field exercises in local wetlands applying principles from lecture.

ENVS 534. Marine Ecology (4-3-0)
Ecology of the disturbed and non-disturbed marine environment. Topics covered include: global distribution of marine organism and the factors influencing their distribution, plankton ecology, the benthos, salt marsh and sea grass ecology, rocky shore and coral reef ecology, human exploitation and interference in marine habitats, and sampling techniques in marine systems.

ENVS 534L. Marine Ecology Laboratory (0-0-4)
Corerequisite: ENVS 534
Extensive field and local bay exercises applying principles from lecture.

ENVS 536. Terrestrial Ecology (4-3-0)
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.

ENVS 536L. Terrestrial Ecology Laboratory (0-0-4)
Corerequisite: ENVS 536
Field exercises in local terrestrial ecosystems applying principles from lecture.

ENVS 538. Limnology and Aquatic Biology (4-3-0)
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.

ENVS 538L. Limnology and Aquatic Biology Lab (0-0-4)
Corerequisite: ENVS 538
Extensive field and laboratory exercises in local lakes and streams applying principles from lecture.

ENVS 540. Environmental Microbiology (4-3-0)
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).

ENVS 540L. Environmental Microbiology (0-0-4)
Corerequisite: ENVS 540
Laboratory exercises include 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)
An examination of the evidence for and causes of global change. The impact of changes in the global cycles of C, N, P and H2O on ecosystem structure and function are examined. Atmosphere, terrestrial and aquatic biosphere changes are discussed along with their effect on plant and animal communities. Students present current scientific papers on various issues within this field.

ENVS 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. Project Research for Non-Thesis (1-3 Credits)

ENVS 699. Thesis Research (1-6 Credits, taken in increments)
The student may not proceed beyond the first credit without thesis committee approval of the proposal.

CHEMISTRY

CHEM 545. Instrumental Methods in Chemistry (4-2-0)
Application of chemical principles to instrumentation. Instruction in operation of a variety of modern instruments.

CHEM 545L. Instrumental Methods in Chemistry Laboratory (0-0-5)
Corerequisite: CHEM 545
Laboratory exercises include instruction in operation of a variety of modern instruments.

CHEM 555. Environmental Instrumental Analysis (4-2-0)
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 555L. Environmental Instrumental Analysis Laboratory (0-0-5)
Corerequisite: CHEM 555
Laboratory exercises include instruction in operation of instruments and analyses specific to the environmental field.

CHEM 585. Advanced Instrumental Analysis (4-2-0)
Prerequisite: Chemistry 445 or 545- Instrumental Methods in Chemistry.
An independent study project, particularly arranged for those working in an analytical testing laboratory. Student and instructor select a problem to be solved, either in the laboratory at the University or at the place of employment (or jointly).

CHEM 585L. Advanced Instrumental Analysis Laboratory (0-0-5)
Corerequisite: ENVS 585
Laboratory exercises include independent study problems in the laboratory at the University or at the place of employment, (or jointly). Emphasis is on utilizing instruments available to the student in the workplace.

GRADUATE FACULTY RESEARCH AREAS

The following section contains a list of the graduate faculty members in M.S. in Environmental Science program and their areas of research.

TAREK ABDEL-FATTAH, PH.D.
Assistant Professor of Chemistry
Environmental Remediation Technology, Catalysis and Nanotechnology for Aerospace Applications

ROBERT B. ATKINSON, PH.D.
Associate Professor of Biology
Restoration of Damaged Ecosystems

HAROLD N. CONES, JR., PH.D.
Distinguished Professor of Biology
Department Chair
History of Technology, Urban Ecosystem Dynamics, Ecotourism

MARK S. GRAY, PH.D.
Associate Professor of Biology
Microbiology, Molecular Biology, Genetics

LINDA M. K. JOHNSON, PH.D.
Assistant Professor of Biology
Plant Population Biology, Horticulture

JAMES R. REED, JR., PH.D.
Professor of Biology
Lake Ecosystem Studies, Bottlenose Dolphin Utilization of Chesapeake Bay Tributaries

BARBARA A. SAVITZKY, PH.D.
Associate Professor of Biology
Ecology of Reptiles and Amphibians, Vertebrate Biology, Animal Behavior

RICHARD E. SHERWIN, PH.D.
Assistant Professor of Biology
Applied Ecology, Conservation Biology

LISA S. WEBB, PH.D.
Assistant Professor of Biology
Genetics, Molecular Biology

GARY J. WHITING, PH.D.
Associate Professor of Biology
Graduate Program Coordinator
GIS, Wetlands Ecology, Biogeochemistry

NON-PROGRAM COURSES OF INSTRUCTION

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

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 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 (3-2-3)
Prerequisite: MUSC 303 or permission of the instructor.
This is a course in the interpretation of musical notation and texts that date from the early medieval period. The class transcribes monophonic and polyphonic examples and interpret texts from manuscript facsimiles. Students learn about style and performance practices and acquire performance skills from their required participation in the Collegium Musicum (MUSC 109 ensemble). Students prepare selections for performance and assist in the Collegium Musicum's direction.

MUSC 590. Falk Seminar in Music Historical Research (3-3-0)
A proseminar in musicology that facilitates the scholarly preparation, writing and annotation of research findings through accurate and disciplined use of conventional style sheets. This course provides an excellent initiative for teacher training and recertification and an avenue into the field of Musicology.

Policies & Procedures

Admission to Graduate Studies

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

Graduate Academic Policies

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

Tuition, Fees and Financial Aid

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

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 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 and requirements for admission, continuation 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). Graduate Admissions collects the application materials and submits the complete application packet with all required documentation to the Office of Graduate Studies (OGS) for distribution to the appropriate Graduate Program Coordinator (GPC). The decision is made by the GPC and the graduate faculty members in his/her department and returned to the OGS. A letter is sent to the applicant.

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

ADMISSION REQUIREMENTS

Application and Fees

Applicants must submit a completed ***Application for Admission to Graduate Study***, an ***Application for Virginia In-StateTuition Rates*** and the appropriate **non-refundable application fee.** All of the graduate application forms are included in the back section of this catalog and also are available from Graduate Admissions located in Administration Building Room 323, or from the Office of Graduate Studies located in Gosnold Hall 220 A, or from **www.cnu.edu/gradstudies**

College Records

Applicants must submit an **official transcript of their baccalaureate degree from a regionally accredited college or university**. The transcript must indicate the date of the applicant's graduation, the degree received, and a complete list of courses taken and grades received.

Applicants also must submit **official transcripts of graduate work** taken at other institutions.

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

Educational and Professional References

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

Entrance Examinations

Examination scores are used as one of several indicators of the applicant's ability to succeed in graduate studies. The **Graduate Record Examination** and **PRAXIS I** are offered on an individually scheduled basis through The Prometric Testing Center: **www.prometric.com** Refer to the master's degree program section for specific examination requirements.

Application Deadlines

Degree-Seeking Students - Application Deadlines

May 1	**Fall** Semester
November 1	**Spring** Semester
April 15	**Summer** Sessions

After these deadlines, applicants may apply to enter as non-degree students.

International Students - Application Deadlines

April 1	**Fall** Semester
October 1	**Spring** Semester
March 1	**Summer** Sessions

Submission of Application Materials

All application materials are to be submitted to:

CNU Graduate Admissions
Administration Building Room 323
One University Place
Newport News, VA 23606-2998

or submitted electronically from: **www.cnu.edu/gradstudies**

- **To determine the status of your application package**, you may e-mail **gradques@cnu.edu.**
- **Applications cannot be processed until the application fee and all documents have been received.**
- **A decision letter** can be expected approximately 3 weeks after the complete application package is submitted to the appropriate Graduate Program Coordinator for evaluation.

Reactivated Applications

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

ADMISSION STATUS

DEGREE-SEEKING STATUS

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

Admission Requirements for Degree-seeking Status

- Completed ***Application for Admission to Graduate Study***
- **$40 Non-refundable Degree-seeking Application Fee**
- Completed ***Application for Virginia In-State Tuition Rates*** (if applying for in-state tuition rate eligibility)
- **Official baccalaureate transcript** from a regionally accredited college or university, indicating the successful completion of all degree requirements and listing all courses taken with grades received
- **Minimum grade point average of 3.0 on a 4.0 scale**
- **Official transcripts for other graduate work** are required
- **3 letters of recommendations**
- **GRE or PRAXIS I** examination scores
- Refer to the master's degree program section for specific or additional admission requirements such as an essay.

NON-DEGREE STATUS

Applicants approved to take graduate courses apart from any program leading to a graduate degree may be admitted as non-degree students. Such students earn academic credit in the same manner as degree-seeking students, and prerequisites for individual courses must be met unless excused by the Graduate Program Coordinator. Credit received as a non-degree graduate student may be applied to a graduate degree if and when the student becomes a degree-seeking graduate student. No more than 12 graduate credit hours may be earned in non-degree status.

Admission Requirements for Non-degree Status

- Completed ***Application for Admission to Graduate Study***
- **$35 Non-refundable Application Fee**

- Completed ***Application for Virginia In-State Tuition Rates*** (if applying for in-state tuition rate eligibility)
- **Official baccalaureate transcript** from a regionally accredited college or university, indicating the successful completion of all degree requirements and listing all courses taken with grades received
- **Minimum grade point average of 3.0 on a 4.0 scale**
- **Official transcripts for other graduate work** are required
- Letters of recommendation and examination scores are not required for the non-degree applicant.

Changing from Non-degree to Degree-seeking Status

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

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

Any Virginia teacher who desires to enroll in a graduate course for **re-licensure** or **continued professional development** does so in a graduate non-degree status. This status allows a teacher to take any graduate (500 - 600 level) course at the University, as long as the prerequisites have been met. Graduate classes will be posted on a graduate transcript with the grades and associated graduate credit hours earned.

Admission Requirements for Teachers in Non-degree Graduate Status

- Completed ***Application for Admission to Graduate Study***
- **$35 Non-refundable Application Fee**
- Completed ***Application for Virginia In-State Tuition Rates***
- A **transcript** must be submitted verifying the baccalaureate degree was completed with a cumulative GPA of 3.0 or higher. (A copy of the transcript is acceptable.*)

* Transcripts may be presented to:
Lyn Sawyer, M.Ed., Associate Director of Graduate Admissions & Records, Gosnold 220 A
Dr. Marsha Sprague, MAT Coordinator, Ratcliffe Hall 124 or 223
Dr. Dorothy Doolittle, Associate Provost for Research & Graduate Studies, Admin. Building 326

INTERNATIONAL STUDENTS

Students from other countries with adequate preparation for graduate study are invited to apply for admission to Christopher Newport University. The University is authorized under federal law to enroll non-immigrant alien. **Application deadlines** for international students are: **April 1** for fall semester, **October 1** for spring semester, and **March 1** for summer sessions. **Because the University is a state-supported institution, it cannot provide financial aid to international students.**

Admission Requirements for International Students

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

1. Submit an ***Application for Admission to Graduate Study*** as a Degree-Seeking Student with the required non-refundable **$40.00 application fee**
2. Submit all documents required for degree-seeking admission to the specific master's degree program. Refer to the master's degree program section in this catalog.
3. Submit an official transcript of their baccalaureate degree, translated into English and submit official transcripts of graduate work, translated into English.
4. Submit official transcripts translated into English to the World Education Services and submit their transcript evaluation to the Graduate Admissions. See Evaluation of International Credits section for contact information.
5. Submit a minimum score of 237 on the computer-based Test of English as a Foreign Language (TOEFL) or an equivalent score of 580 on the paper-based TOEFL.
6. Complete a financial resource statement and provide an official bank affidavit guaranteeing that adequate funds are available for university study prior to coming to the United States.

Evaluation of International Credits

International students must submit official transcripts translated into English to **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. Visit the web site at **http://www.wes.org**, or contact WES at **info@wes.org,** or call **1-800-937-3895.**

CONTACT INFORMATION

Office of Graduate Studies is located in Gosnold Hall Room 220A and may be contacted at **(757) 594-7544** or by e-mail at **gradstdy@cnu.edu**

Graduate Admissions is located in Administration Building Room 323 and may be contacted at **(757) 594-7297** or by e-mail at **gradques@cnu.edu**

All application materials are to be submitted to:

CNU Graduate Admissions
Administration Building Room 323
One University Place
Newport News, VA 23606-2998

or submitted electronically from**: www.cnu.edu/gradstudies**

- **To determine the status of your application package**, you may e-mail **gradques@cnu.edu.**
- **Applications cannot be processed until the application fee and all documents have been received.**
- **A decision letter** can be expected approximately 3 weeks after the complete application package is submitted to the appropriate Graduate Program Coordinator for evaluation.

GRADUATE ACADEMIC POLICIES

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

IMMUNIZATION REQUIREMENT

In an effort to provide a healthy environment in which to live and learn, CNU has created an immunization policy that incorporates the guideline for immunizations set forth in the Code of Virginia, Section 23-7.5. Students may have received these immunizations as a child or later in life. **All full time students** must provide a completed ***Certificate of Immunization***, which must be signed or stamped by a licensed health care professional. Failure to do so will result in the student's inability to register for and attend the next semester at CNU. The form is sent to students upon admission to the University. Additional copies may be obtained from the Office of the Registrar, Room 205 Administration Building, Christopher Newport University, One University Place, Newport News, VA 23606-2998 or by calling (757) 594-7155.

REGISTRATION

A student must be admitted as a Graduate Student to receive graduate credit.

The University has established a mandatory registration procedure for students currently enrolled at the University for the fall and spring semesters. Dates and times for registrations are announced in the ***Schedule of Classes*** on the web: **http://www.cnu.edu** prior to each semester (Fall, Spring and Summer). Students who register during mandatory registration will receive a bill for tuition and fees through the mail. The balance must be paid by the deadline denoted on the billing statement and announced in the ***Schedule of Classes*** available on CNU's website. Students are not considered officially registered until tuition and fee payments have been made with the Business Office. The University reserves the right to cancel registrations if bills are not paid.

Newly admitted students are expected to meet with their graduate academic advisor prior to registration to discuss class scheduling. Newly admitted students are expected to attend their respective orientation programs when scheduled by their respective Graduate Program Coordinators.

Students who have not registered/nor attended for two consecutive regular semesters (Fall and Spring) will become inactive. **Inactive students who wish to register must seek readmission to the University.**

Schedule Adjustment (Add/Drop)

After registering for classes, students may make changes to their class schedules through the Office of the Registrar on the ***Schedule Change Form***. Course changes must be made in this manner to be recognized by the University. Schedule changes are processed in the Office of the Registrar during the first five days of the fall and spring semesters. Summer dates are specified by term in the ***Schedule of Classes***. Courses dropped during the Schedule Adjustment period do not become part of the student's permanent academic record.

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. The ***Withdrawal Form*** must be signed by the instructor. A student who withdraws from a course during the withdrawal period, after receiving permission will receive a grade of ***W***. A student who withdraws from a course without receiving permission will receive a grade *of* ***F.*** During the withdrawal period, the Registrar's Office will forward the ***Withdrawal Form*** to the instructor for the instructor's record.

Medical/Administrative Withdrawal

Students who wish to withdraw from the semester for medical reasons (Medical Withdrawal) must submit a letter to the Office of the Registrar. The letter must be written by a physician certifying that the student is incapable of completing the academic work for the semester due to medical reasons. In other circumstances requiring the student to withdraw from the semester, a letter and documentation requesting an Administrative

Withdrawal must be submitted to the Associate Provost for Research and Graduate Studies, who must approve the request. Upon approval of the request, all grades for the semester in question will be noted as ***M*** on the student's transcript. Students may not exercise the medical withdrawal option to withdraw from individual courses.

Withdrawal from the University

Withdrawal from the University means that the student ceases to attend all classes and is no longer enrolled in the University. Students desiring to withdraw from the University should do so by filing the ***Withdrawal Form*** or by written application to the Registrar. Unless withdrawals 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.

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. Students may complete any of the required assignments by permission of the instructor. Students auditing a course will receive ***AU*** rather than a letter grade.

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

Independent Study

The purpose of independent study 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 accomplished 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*** may be obtained from the Office of Graduate Studies or on line at **www.cnu.edu/gradstudies.** It must be completed by the student and the faculty member directing the Independent Study. Within five days of being signed by both parties, the ***Independent Study Form*** must be submitted to the appropriate Graduate Program Coordinator and the chair of the department. Students must then submit the completed, approved form to the Office of Graduate Studies. The Office of Graduate Studies must have a copy of the form in the student's file and will enroll the student in the class.

Class Attendance

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

Other regulations are:

1) Missing a class meeting does not in any way lessen the student's responsibility for that part of the course that has been missed.
2) Instructors may differentiate between excused and unexcused absences and authorize makeup work when appropriate.
3) Students who miss classes to represent the University must notify the class instructors in advance of those absences. Given prior notice, instructors will allow students to make up work or complete work in advance of the class absence. In cases of disagreement about whether or not the activity represents the University, the Director of Graduate Studies will make the determination.

Final Examinations

The examinations take place at times announced in the ***Schedule of Classes*** which is available on the web at **www.cnu.edu**. 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 Graduate Program Coordinator or professor.

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 professor before the examination. An excuse on the grounds of illness will be accepted when it is verified by a physician and received by the Office of Graduate Studies. The professor should be notified as soon as possible if illness or other emergency causes a student to be absent from an examination. If the professor cannot be notified, the student must notify the Office of Graduate Studies at **gradstdy@cnu.edu** and **594-7544** as soon as possible.

ACADEMIC STANDARDS

Course Numbering

Courses numbered 500 through 699 may be applied to a graduate degree. Courses numbered 400/500 may be taken at either an undergraduate or graduate level. Additional work and/or a higher standard will be 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, (3-3-3) for example, have the following meanings: the first number refers to the number of credit hours awarded for successful completion of the course; the second number refers to the number of weekly lecture hours in the course; and the third number refers to the number of weekly laboratory or practicum hours in the course.

Grade Point Average

Two grade point averages (GPAs) are maintained. The "cumulative GPA" is the total number of grade points earned (for CNU courses and all transferred courses) divided by the total number of credit hours attempted (CNU and all transferred hours). The "CNU GPA" is the total number of grade points earned for CNU courses divided by the total number of credit hours attempted at CNU. Effective Fall 2002 transfer credit is no longer included in grade points and credit hours attempted, resulting in one GPA. However, transfer credit is included in credit hours earned towards a degree.

Grading System

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

Incomplete Grade

The grade of Incomplete, ***I***, is a temporary grade that the instructor may assign when exceptional, documented circumstances prevent the student from completing required assignments or from taking the final examination.

If the grade of Incomplete is assigned, the student must complete the work and the professor must submit the grade before the end of the 4th week of the next regular semester. If a ***Grade Change Form*** is not submitted by the deadline to the Office of the Registrar, the grade of ***I*** automatically will be converted to a grade of ***F***.

- If the grade of Incomplete is given in the Fall, it must be removed by the 4th week of the following Spring semester.
- If the grade of Incomplete is given in the Spring, it must be removed by the 4th week of the following Fall semester.
- If the grade of Incomplete is given in the Summer, it must be removed by the 4th week of the following Fall semester.

Extensions of the Incomplete Grade(s) will require the approval of the Director of Graduate Studies.

Grade of Satisfactory/Unsatisfactory

A grade of Satisfactory (***S***) or Unsatisfactory (***U***) will be given for thesis credit while the thesis is in progress. After the thesis has been written, defended and accepted, the thesis advisor will replace the ***S*** and/or ***U*** designation with a grade of numerical value. Until that time, the ***S*** or ***U*** designation assigned for thesis work in progress will not affect the student's grade point average. Thesis credit beyond the minimum required by the program will remain with an ***S*** and/or ***U*** designation.

Grades For Repeated Courses

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

Grade Reports

Grade reports are mailed at the end of each semester and summer terms.

Permission to Take Classes Elsewhere

Admitted students are expected to complete all of their course work in residence. In those unique situations when a student seeks to enroll in credit courses at another institution concurrently, **the student must obtain advance approval from the University**. Students must complete a ***Request to Take Graduate Course Elsewhere*** form, available in the Office of Graduate Studies or from the CNU Graduate Studies website: **www.cnu.edu/gradstudies/forms.html.** The University grants students permission to take courses for credit at other institutions only when such action is academically necessary to meet scheduling requirements of their programs that cannot be met in residence at CNU.

Transfer credits for courses taken elsewhere will be granted only if the student has prior written approval and earns a grade of *B*- or better. Pass/fail grades are not accepted for transfer credit. A graduate student is limited to a **maximum of 6 credit hours that may be transferred** into the University.

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

Undergraduate Students Taking Graduate Courses

CNU students in Undergraduate Senior status may seek permission to take graduate courses if their grade point average is 3.0 or higher. The ***Request for Approval to take a Graduate Course at CNU While in Undergraduate Status*** form is available in the Office of Graduate Studies and on the web at **www/cnu.edu/gradstudies/form.html.** Approval to enroll in a graduate course must be obtained from the

course instructor and the Graduate Program Coordinator with verification of the student's current grade point average by the Office of Graduate Studies.

CNU students in Undergraduate Senior status who are approved are limited to one graduate course (with any associated laboratory) per semester and to a total of two graduate courses (with any associated laboratory) per academic year. Credit for such courses may not be applied toward an undergraduate degree; however upon graduation can be transferred to the student's graduate record at the University, if the credits apply and the student petitions the Associate Provost for Research and Graduate Studies. Forms for this purpose are available from the Office of Graduate Studies and must be attached to the ***Registration Form*** at the time of registration.

Graduate Students Taking Undergraduate Courses

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

ACADEMIC PERFORMANCE POLICIES

Minimum Standards for Academic Continuance

Academic Probation

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 seeking students whose cumulative graduate grade point average falls below 3.0; or who earn one grade of ***C***; or who earn three hours of ***U,*** will be placed on academic probation.

Attempted credit hours referenced are defined as those hours for which a student has enrolled in and earned a permanent grade. Attempted credit hours are cumulative. Credit for courses taken at other institutions while on probation will not be transferred to CNU.

Academic Suspension

Graduate students will be suspended following the first semester in which they do not meet the minimum standards for continuance. Degree-seeking and non-degree seeking students whose semester graduate grade point average falls below 3.0 for a second semester; or who earn a second grade of ***C***; or who earn one grade of ***F,*** or who earn 6 hours of ***U*** will be placed on academic suspension for one semester, not including summer.

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

- Make an appointment to develop a plan of study with their Graduate Program Coordinator before November 1 for a return in the spring semester and before April 1 for a return in the summer or fall semester.
- Register for the semester immediately following their suspension semester, not including summer.
- This plan of study will indicate the credit hour limits the students must observe and a schedule of courses to be taken each semester.
- If the student follows this plan of study and earns a 3.0 GPA or higher, then the student will not be suspended the next semester even if the cumulative GPA is below that required for minimum standing.
- If the student does not follow the plan of study, or does not earn a GPA of 3.0 or higher in each subsequent semester, the student will be dismissed.

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

Academic Dismissal

Students who fail to meet minimum standards for continuance will be academically dismissed from the University upon receiving the second academic suspension. Students who have been academically dismissed from Christopher Newport University may not apply for readmission to the University for at least two

calendar years. Such applicant's academic records at CNU will be considered as part of the relevant materials for readmission to the University.

Appeal Process For Suspension or Dismissal

Students who fail to meet CNU graduate academic standards and receive a suspension or dismissal may appeal the decision to the Director of Graduate Studies. The Director of Graduate Studies will appoint a three-person ad hoc committee to review the facts and decision of the situation and consider the student's stated reasons of appeal. The faculty appointed to this committee will be composed of one Graduate Program Coordinator from a graduate program not involved in the decision, and two other members 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.

On 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***.

A student may not register for any class at the University while on academic suspension.

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 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 hours of graduate credits is required for a master's degree. However individual programs may require additional hours. At least 24 of these hours 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 insti-

tution will be counted toward the total number of credits required for the graduate degree but will not be computed in the student's cumulative graduate grade point average. If no thesis, portfolio, internship or culminating project is required as a part of the degree requirements, a minimum of 36 graduate credits will be required for the degree.

Transfer of Credit

A maximum of 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 submmitted 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 Graduate Program Coordinator.
- Transfer credit must have been taken within six years prior to the award of the CNU master's degree.
- Courses taken with pass/fail or satisfactory/unsatisfactory grades are not acceptable for transfer credit.

The Graduate Program Coordinator must approve the transfer of credit. **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 Graduate Program Coordinator before registering at the other institution. The form is submitted to the Office of Graduate Studies for final approval. Generally, permission to take a course elsewhere will not be given during the student's last semester at CNU.

Time Limit

Graduate students must complete all of their work toward a master's degree within a period of six calendar years. This period begins with the student's initial registration as a graduate student. Academic work, including transfer credit, taken more than six years prior to the award of the master's degree cannot be credited toward that degree. In extenuating circumstances a student may petition for a waiver of this limit. The waiver must be approved by the student's advisor, Graduate 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.

Plan of Study

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

Full-time Status

Student who enroll in nine or more graduate credits in a given semester or a total of at least six credits for all summer sessions combined will be considered a full-time student. **Students need approval of the Director of Graduate Studies 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 by completing the ***Application for Candidacy*** form 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.The form is available at **www.cnu.edu/gradstudies**

Comprehensive Examination

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

Thesis

Research resulting in the presentation of a thesis may be required by the degree program. **Students are required to be enrolled in at least one thesis credit hour during any semester in which they are working on the thesis and must be enrolled in one thesis credit hour during the semester of degree completion.** The defense of the thesis may be considered as part of the comprehensive examination. All theses presented must meet the requirements as listed in the ***Policy and Style Manual for Master's Theses at Christopher Newport University.*** The manual is available at **www.cnu.edu/gradstudies .** Theses may be placed in the CNU library as research sources available to the academic community.

Intent to Graduate Form

Students must file the ***Intent to Graduate*** form, available on the web at **www.cnu.edu/gradstudies**, with the Office of Graduate Studies by the following dates:

February 1	**May Graduation**
May 1	**August Graduation**
September 1	**December Graduation**

Commencement Exercises

Commencement exercises are held twice each year in May and December through December 2005. Students who complete degree requirements in August and December will have degrees conferred in December, while those students who complete requirements in May will have degrees conferred in May. Beginning in 2006, Commencement exercises will be held yearly in May. Diplomas will be mailed following the December ceremony and available for pick-up following the May ceremony. All prospective graduates will be contacted by the Office of the Registrar concerning rehearsal and attendance before commencement exercises. **Those students planning to attend commencement must notify the Office of the Registrar by the announced deadline so that seating arrangements can be finalized for all who plan to participate.** Prospective graduates will be advised when to order caps and gowns from the University Bookstore. Students who plan to attend commencement must keep the Office of the Registrar informed of any address changes so that they can receive important information concerning graduation. Students will not be permitted to participate in commencement ceremonies unless all requirements, including courses and credits, are completed prior to the ceremony.

GRADUATION REQUIREMENTS

- Successful completion of minimum hours of the master's degree program course work
- Cumulative 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 Office of Graduate Studies by the published deadline in the academic calendar.

TUITION AND FEES

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

FEES AND FINANCIAL INFORMATION

Academic Tuition

In-state students	$267 per credit hour
Out-of-state students	$549 per credit hour

Tuition payment is based on a charge for each credit hour of instruction. Registration is not complete until a student has either made payment or arranged to make payment with the Business Office. Tuition and fees for auditing a course are the same as the tuition and fees for taking a course for credit. Questions concerning payments and fees should be directed to the Office of Student Accounts, Room 210, Administration Building, (757) 594-7195 or (757) 594-7060.

General Fees*

Application – Graduate Degree-Seeking	$40
Academic Transcripts	No charge
Returned Check Fee (per return)	$25
Late Payment Penalty and Administration Fee (per payment)	$50
Reinstatement Fee (first week of classes)	$100
(second week of classes)	$200
Residential Room Deposit	$500
Graduation Fee**	$100
Parking Fee (per academic year)	$200
Parking Fee (summer only)	$100

* The fees listed above are non- refundable.

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

FOR UP TO DATE INFORMATION PLEASE REFER TO: www.cnu.edu/busoff

Graduate Degree-Seeking Application Fee

A student who wishes to be admitted as degree-seeking must pay a **$40 non refundable 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 is $35 for students who wish to be admitted as non-degree seeking.

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 Adjustments (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 100% refund period.

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

Students who plan to or are receiving financial aid, course-load reductions and additions can affect the amount of financial aid awarded to them. This is particularly true if a course reduction results in a full-time stu-

dent 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 a standard room and board is $7500.00 (Rates are subject to change each year based on the decision of the Board of Visitors). To apply, submit the ***Housing & Dining Services Contract Acceptance Form*** with a $100 deposit to the Cashier's Office, Administration Building, or mail to Christopher Newport University, ATTN: Cashier's Office, One University Place, Newport News, VA 23505-2998.

Occupancy is on a first-come, first-serve basis. Room and board fees must be paid in full prior to check-in. These fees are due by 5:00 pm 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 ***Housing & Dining Services Contract Acceptance Form***, please contact the CNU Office of University Housing by e-mail at **housing@cnu.edu**,or call **(757)-594-7756/7574**.

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 financial penalties.**

For registration and schedule adjustments taking place after the payment due date, bills will be mailed at the end of the schedule adjustment period and the payment due date will be noted on the bill.

Payments

Payment must be made at the Cashiers Office with cash, check payable to Christopher Newport University (CNU) or money order. 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 this publication.

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 receive 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 aid awarded, approved and accepted, 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 in which the check is not remitted directly to the University's Financial Aid Office.) If the difference is not paid by the payment due date, a late payment fee will be assessed. If a financial aid recipient chooses to withdraw from classes, they must complete the appropriate forms with the University Registrar or they will be held liable for all classes for which they are registered. LATE FINANCIAL AID APPLICANTS MUST BE PREPARED TO MEET THE TUITION OBLIGATION THROUGH MEANS OTHER THAN FINANCIAL AID BY THE PAYMENT DUE DATE.
4. The University may at its sole discretion cancel a student's registration for failure to meet financial obligations at any time.

Payment Policy

Tuition and fees are considered fully earned and are due at the time of registration or no later than the payment due date established for each term. TUITION PAYMENT MAY BE MAILED IF RECEIVED IN THE UNIVERSITY BUSINESS OFFICE BY THE PAYMENT DUE DATE. Postmark date does NOT apply.

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

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

Reinstatement

The University will cancel the registration for all students who have not paid or made financial arrangements at the end of the schedule adjustment period. Beginning on the Monday following the schedule adjustment period, students whose registration was canceled on Friday may be reinstated provided they pay the full amount of their financial obligation. Students may be reinstated during the week following schedule adjustment for a reinstatement fee of $100 plus a $50 late fee. Students may be reinstated during the second week following schedule adjustment for a reinstatement fee of $200 plus a $50 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 schedule adjustment. No reinstatements will be permitted after this date. REINSTATEMENT DOES NOT APPLY TO STUDENTS WHOSE REGISTRATION WAS CANCELED PRIOR TO SCHEDULE ADJUSTMENT WEEK.

Academic Management Services (AMS) Tuition Payment Plan

This plan allows payment of ANNUAL tuition and fees in ten (10) equal monthly installments. The plan starts with the first payment due June 1 and the last payment March 1. Participation in the plan is on an ANNUAL basis, at an ANNUAL cost of $50. When determining the amount to budget, please consider tuition and fees for FALL AND SPRING terms. 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 Oct. 1. 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 late payment fee for EACH PAYMENT that is made late to AMS. 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. The application deadline is August 1 each year. 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 given for any fee 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 Federal Law. 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 grantor so requires. 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 makes the schedule change.

For students receiving financial aid or tuition assistance, funds 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 drop a course on or before the deadline to be eligible for a refund. Students who participate in the AMS payment budgeting plan whose payments received by the University exceed the amount owed will receive a refund from the University. Please do not attempt to obtain a refund from AMS directly.

All refunds will be processed according to 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.

Please be aware that students are held individually responsible for the information contained in this catalog. Failure to read and comply with University regulations will not exempt a 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 which is canceled by the University; 100% for any course dropped on the first day of the academic term through the end of the first week; 75% for any course dropped during the second week of the academic term; 50% refund for any course dropped during the third and fourth week of the academic term, after which time there shall be no refund.

Refund Schedule for Summer Terms

For refund policies concerning Summer Terms please refer to the ***Summer Schedule of Classes*** or Business Office website, **www.cnu.edu/busoff**.

Returned Checks

A RETURNED CHECK FEE OF $25 will be assessed for all checks returned from the bank to the University for any reason. An individual has seven 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 $25 returned check fee. If the student does not repay the check and the fee before the payment due date, a $50 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 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 (including 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 at the University until these financial obligations have been paid in full. Students will not be permitted to register for subsequent terms, grades will be held, and the University will not issue official transcripts, etc. This also will apply to students who retain property that belongs to the University.

If a student's financial account becomes delinquent, the University charges a $50 late payment penalty and administrative fee. The University may turn the account over to a third-party collection agency/credit bureau, the Department of Taxation, and the Attorney General's Office. The University is permitted under Virginia law to attach Virginia State income tax refunds or lottery winnings in repayment of any debt 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 payment by the payment deadline. Students who are using Veterans Administration educa-

tion 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, located in the Office of the Registrar, by telephone at **(757) 594-7175** or by email at **vetaffrs@cnu.edu**.

SENIOR CITIZENS

The 1989 session of the Virginia General Assembly amended and re-enacted the Senior Citizen's Higher Education Act of 1974. Senior citizens are permitted to register and to enroll in courses as a full-time or part-time student for academic credit, without charge, providing taxable income for federal income tax purposes did not exceed $15,000 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 citizens who have completed 75 percent of the requirements towards a degree, the University is authorized to make individual exceptions to such procedures as may be established by the Council of Higher Education.

Under this program, the categorization of senior citizen applies to those whose 60th birthday falls before the registration term and who have been a legal domiciliary of Virginia for one year. No limit is placed on the number of terms a senior citizen who is not enrolled for academic credit may register for courses, but the individual can take no more than three non-credit courses in any one term. The law places no restriction on the number of courses that may be taken for credit in any term or on the number of terms in which an eligible senior citizen may take courses for credit. 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 ***Application for In-State Tuition Rates*** and return it with their admission applications. Students who are already enrolled at CNU must apply for a change of status through the Office of the Registrar. Such requests must be made on ***Application for In-State Tuition Rates***. Inquiries should be addressed to Graduate Admissions, Administration Building 323, One University Place, Newport News, VA 23606-2998.

Procedure

Upon receipt in Graduate Admissions, the ***Application for In-State Tuition Rates*** form will be reviewed by a staff member for an initial determination. If the staff member disagrees with the student's own determination for in-state privileges, the student will be contacted 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 10 working days of being notified of the initial determination. A panel of three University officials will 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 Associate Director of Graduate Admissions and Records 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

Christopher Newport University offers financial assistance to qualified graduate students to help pay for all or part of their college expenses. All students are encouraged to complete the *Free Application for Federal Student Aid* (FAFSA) by February 1st to ensure aid is in place for the following academic year. FAFSA forms can be completed on the web at http://www.fafsa.ed.gov with the appropriate PIN number, or paper applications are available in the Office of Financial Aid. Results are sent to the CNU Office of Financial Aid electronically and students can expect to receive their offer of financial aid no later than June 30. Students who file their FAFSA late should be prepared to pay their tuition and expenses up front. Students must apply for financial aid every year using the FAFSA to continue to receive aid.

STUDENT ELIGIBILITY

To be eligible for financial aid, graduate students must:

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

Half time students must be enrolled at least 5 credits for fall and spring semesters, and a total of at least 3 credits for all summer sessions combined to receive aid. Total aid for the year cannot exceed federal annual loan limits established by the federal government and are limited by the cost of attendance (tuition, fees, room, board and miscellaneous expenses as defined by the Office of Financial Aid).

FEDERAL STAFFORD STUDENT LOAN

Graduate students may borrow up to $18,500 per academic year, not to exceed the cost of attendance. Loans made under the Federal Stafford Student Loan program are variable interest rate, long-term, deferrable loans. These loans may be subsidized, unsubsidized, or a combination of both, based on the need of the student. Subsidized loans are interest free to the borrower as long as the student is enrolled at least half-time and are based on need. The maximum subsidized loan for a graduate student is $8,500. If a student does not show need as determined by the FAFSA, the loan may be unsubsidized and the interest that accrues while the loan is in deferment is the responsibility of the student. An additional unsubsidized loan of $10,000 is available to graduate students, for a total of $18,500 per year, not to exceed the cost of attendance. These loans are deferred until six months after the student graduates or stops attending half time.

Loan proceeds are sent directly to CNU and applied to charges before any refunds are made to the student. Funds will come via either paper check or electronic funds transfer, according to the student's choice of lender. Students are encouraged to choose from the Preferred Lender List provided with the award notice for their choice of banks to ensure timely disbursement of funds. All loans must be disbursed in two equal disbursements, one at the beginning of the loan term and one at the midpoint. Usually this translates to one disbursement in the fall and one disbursement in the spring, but in the case of a single semester loan (including summer loans), the second half of the loan will come at the midpoint of the semester and could delay refunds to the student

SCHOLARSHIPS

Graduate students are encouraged to seek out outside scholarships as an additional source of funding to pay for college. The following is a list of suggested websites:

Http://www/DirectScholar.com
Http://www.fastweb.com
Http://www.BrokeScholar.com
Http://www.scholarships.fatomei.com
Http://www.jackkentcookefoundation.org
Http://www.FreeCollegeScholarships.net

When the Office of Financial Aid is notified of specific outside scholarship sources, they will be made available via email to all students, on the Financial Aid website, and at the Office of Financial Aid.

Satisfactory Academic Progress

Per federal regulations, students receiving financial aid must be making progress toward a degree. Students must remain in good academic standing and complete 75% of the courses attempted.

Budget Planning

Budget planning for attendance at CNU should consider both direct and indirect costs. Direct charges are tuition and fees (http://www.cnu.edu/busoff/fall_spring.htm). Indirect costs include but are not limited to room, board, books, transportation, and miscellaneous expenses. Students should be prepared to pay out of pocket for books and initial living expenses, as student loans are not disbursed until the first week of classes.

Additional Information

Students interested in receiving financial aid should view the Christopher Newport University website at **http://www.cnu.edu/Administration Building/finaid/**. Financial aid applications and individual guidance are available on a walk-in basis at the Office of Financial Aid, Administration Building, Room 201. You may also call the office at **(757) 594-7170** or email your questions to **finaid@cnu.edu**.

SHORT-TERM EMERGENCY LOANS

John Stephen Rasmussen Memorial Fund

This fund was established by the community in 1972, in memory of John Stephen Rasmussen, a 21-year old student who lost his life in a fire while in the act of saving others. He was posthumously awarded a Carnegie Medal. Students may borrow, interest free, sums (funds permitting) for a period not to exceed 30 days. Applicants should present a valid CNU student ID card when applying to the University's Office of Student Accounts.

Emergency Loan Fund

The Emergency Loan Fund was established in 1967 by the sophomore class, in honor of former CNU President James C. Windsor. Students may borrow, interest free, sums (funds permitting) for a period not to exceed 30 days. Applicants should present a valid CNU student ID card when applying to the University's Office of Student Accounts. Emergency loans are limited to $75 per student, and students may receive no more than two emergency loans per academic term.

GRADUATE ASSISTANTSHIPS

Terms

The 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: research and/or related activities, administration (e.g., of tutorial programs), or teaching and/or related activities,. 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 (fi time) then there can be no outside employment without prior approval of the Director of Graduate Studies.

Criteria

The degree-seeking graduate student must be enrolled as a full-time student, taking a minimum of six and a maximum of nine credit hours in the semester of the award. He/she must submit a Graduate Assistantship Application and the following: scores from the standardized test required for graduate program admission, graduate grade point average, undergraduate grade point average, two letters of reference, and an essay explaining how the award will further his/her career goals.

Application Procedures

Contact the Office of Graduate Studies at (**757) 594-7544** or **gradstdy@cnu.edu** for a Graduate Assistantship Application and submit the application directly to your Graduate Program Coordinator with a copy to the Office of Graduate Studies.

FAMILY EDUCATIONAL RIGHTS AND PRIVACY ACT (FERPA)

Listed below is the notification of the Family Educational Rights and Privacy Act of 1974 (FERPA). The University is required to inform enrolled students annually of their rights under the terms of FERPA. The act does not apply to students admitted to the University who have not officially enrolled.

NOTE: Access www.cnu.edu for the latest changes to the Family Educational Rights and Privacy Act of 1974 (FERPA)

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 student information that is maintained and yet provide access to student records for those having a legitimate educational interest in viewing such records. Regulations and procedures to ensure adequate protection of the student are provided in this policy.

B. Student Rights under FERPA:

1. Enrolled students have the right to inspect their records within 45 days of the request for inspection and are entitled to an explanation of any information therein. "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 that student. When access is permitted, documents will be examined only under conditions that will prevent unauthorized removal, alteration, or mutilation. Students must submit to the Office of the Registrar written requests that identify the record(s) they wish to inspect. A University official will make arrangements for access and notify the student of the time and place where the record(s) may be inspected. If the University official to whom the request was submitted does not maintain the requested record(s), that official shall advise the student of the correct official to whom the request should be addressed.
2. 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. Letters of recommendation are removed from the Admissions files before the files are forwarded to the Registrar's Office.
    b. Parents' confidential financial statements.
    c. Personal files and records of members of faculty or administrative personnel which are in sole possession of the maker thereof.
    d. Education records, which contain information about more than one student; in such cases, CNU will allow the inquiring student access to the part of the record, which pertains only to the inquiring student.
    e. Records of the Admissions Office concerning students admitted but not yet enrolled at the University.
    f. Medical/psychological records used in connection with treatment of the student. A physician or psychologist of the student's choice may view such records.
    g. University Police Department records, when utilized for internal purposes by this office in its official capacities.
3. 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, not will copies of such documents be given to the student. The student should request such records from the originating institution.
4. Students have the right to request an amendment of the education record that the student believes is inaccurate or misleading. Should a student believe his or her record is incorrect, s/he should write the University official responsible for the record, clearly identify the part of the record s/he wants changed, and specify the information s/he feels is inaccurate or misleading. 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 University Registrar.

5. Students have the right to consent to disclosures of personally identifiable information contained in the student's education record, except to the extent that FERPA authorizes disclosure without consent (see C3 below).
6. Students have the right to file a complaint with the US Department of Education concerning alleged failures by CNU to comply with the requirements of FERPA. The name and address of the office that administers FERPA is:

    Family Policy Compliance Office
    US Department of Education
    600 Independence Avenue, SW
    Washington, DC 20202-4605

C. Access to Student Records by Others

1. Disclosure of General Directory Information: Certain information may be released by the University without prior consent of the student if considered appropriate by designated school officials. Such information is defined as the following:
    a. Student's name, address, telephone number (permanent and local).
    b. Date of birth.
    c. Dates of attendance at the University, field of concentration, degrees, honors and awards.
    d. Enrollment status - full-time or part-time
    e. Height and weight of members of athletic teams.
    f. Participation in officially recognized activities.
2. Directory information will not be released for commercial purposes by administrative offices of the University under any circumstances. **Students may request that directory information not be released by written request to the 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. "School Official" is defined as a person employed by the University in an administrative, supervisory, academic or research, or support staff position (including University law enforcement personnel and health staff); a person or company with whom the University has contracted (such as attorney, auditor or collection agent); or a person serving on the Board of Visitors.
    b. A school official must have a legitimate educational interest in order to review an education record. A legitimate educational interest is the demonstrated 'need to know' and is further defined in the following manner: the information requested must be within the context of the responsibilities assigned to the School Official; the information sought must be used within the context of official University business and not for purposes extraneous to the officials area of responsibility or the University; information requested must be relevant and necessary to the accomplishment of some task or to making some determination within the scope of University employment. A school official has a legitimate educational interest if the official needs to review an education record in order to fulfill his or her professional responsibility.
    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. Parents may also provide documentation showing the student as a financial dependent according to the definition provided in section 152 of of the IRS Code. Otherwise, the academic transcript will be sent only to the student, or at the student's written instruction, a policy consistent with the University's interpretation of FERPA.
5. Disclosure to other educational agencies and organizations: Information may be released to another institution of learning, research organization, or accrediting body for legitimate educational reasons, provided that any data shall be protected in a manner that will not permit the personal identification of the student by a third party.
6. Disclosure to local, state, and federal governmental agencies: Government agencies are permitted access to student records only when auditing, enforcing, and/or evaluating sponsored programs. In such instances, such data may not be given to a third party and will be destroyed when no longer needed for audit, enforcement, and/or evaluative purposes.

Board of Visitors

Rector
William P. Heath, Jr.
Christiansburg, Virginia
Term Expires 6/30/06

Vice Rector
Claude A. Hornsby, III
North, Virginia
Term Expires 6/30/09

Secretary
Deborah L. Budlong
Newport News, Virginia
Term Expires 6/30/09

The Hon. Flora Crittenden
Newport News, Virginia
Term Expires 6/30/08

Douglas G. Duncan
Memphis, Tennessee
Term Expires 6/30/07

Judy F. Ford
Richmond, Virginia
Term Expires 6/30/06

Jane Susan Frank
Newport News, Virginia
Term Expires 6/30/08

Mary Elizabeth Hoinkes
Hartfield, Virginia
Term Expires 6/30/06

Thaddeus B. Holloman, Sr.
Newport News, Virginia
Term Expires 6/30/06

James R. Joseph
Hampton, Virginia
Term Expires 6/30/06

Frances Luter
Smithfield, Virginia
Term Expires: 6/30/08

Michael C. Martin
Bristow, Virginia
Term Expires 6/30/09

Gerald Passaro
Williamsburg, Virginia
Term Expires: 6/30/08

Veasey Wilson
Yorktown, Virginia
Term Expires 6/30/07

University Administration

Paul S. Trible, Jr.
President

Stevalynn R. Adams
Director of Publications for Marketing and Communications

Lennie I. Alger
Director of Plant Operations

William R. Biddle
Executive Director
Ferguson Center for the Arts

William L. Brauer
Executive Vice President

Hunter S. Bristow
University Architect

Bruce S. Bronstein
Director of Communications
Ferguson Center for the Arts

Jeffrey S. Brown
Chief of University Police

Patricia P. Cavender
Dean of Admissions

Denise B. Crittenden
Director of Materiel Management

Dorothy C. Doolittle, Ph.D.
Associate Provost for Research and Graduate Studies

Donna M. Eddleman
Dean of Students

Beth A. Fogarty
Director of Sponsored Programs

Keston Fulcher, Ph.D.
Director of Assessment & Evaluation

Douglas C. Gallaer
Associate Vice President of Human Resources

Constance Gianulis
Director of International Initiatives & Fellowships

Douglas K. Gordon,Ph.D.
Dean, College of Liberal Arts & Sciences

Marcia A. Harrington, Ph.D.
Director of Institutional Analysis

Kevin M. Hughes, Ph.D.
Director of Student Life

David B. Kennedy
Director of Grounds

Lucy L. Latchum
Director of Special Events

Beth A. Lustig
Director of Annual Fund

Patricia L. McDermott
Director of Planning & Budget

Matt McKinney
Director of Development

Robert L. Midgette, Jr.
Director of Internal Audit

Michelle L. Moody
Director of EEO and Faculty Recruitment

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

Maurice J. O'Connell
Vice President of Student Services

Kevin J. Ososkie
Director of Dining Services

Steven G. Pappas
Associate Vice President
for Auxiliary Services

Cynthia R. Perry
Chief of Staff

Virginia S. Purtle, Ph.D.
Vice Provost

Lisa Duncan Raines
Registrar

Gerard P. Roeder
Director of Residence Life

Kimberly M. Roeder
Director of Student Activities

Carol A. Safko
Director of Academic Advising

Mary Katherine Sellen
University Librarian

Andrew W. Sheston
Director of Housing

Douglas R. Shipley
Director of Freeman Center

Richard M. Summerville, Ph.D.
Provost

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

Maribeth Trun
Associate Vice President for Finance and Comptroller

Donna A. Varner
Director of Institutional Research

George R. Webb, Ph.D.
Chief Information Officer

Lorraine M. Westphal
Director of Compensation Services

Mary L. Wigginton
Director of Financial Aid

Nancy W. Willson
Vice President of University Advancement

Lisa D. Wingfield
Director of Fitness Pavilion

C.J. Woollum
Director of Athletics

Margaret O. Yancey
Special Assistant to the President

Graduate Faculty

This list reflects the expected status of members of the graduate faculty for 2005-2006 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

Richard M. Summerville
Provost. Distinguished Professor of Mathematics.
B.S., Clarion State University; A.M. Washington University at St. Louis; Ph.D., Syracuse University

Dorothy C. Doolittle
Associate Provost for Research and Graduate Studies. Professor of Psychology.
B.A., University of Georgia; M.S., Ph.D., University of Tennessee at Knoxville

Virginia S. Purtle
Vice Provost. Professor of Sociology.
B.S., M.S., Oklahoma State University; Ph.D., Louisiana State University

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

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

Mary Katherine Sellen
University Librarian. Associate Professor of Library Science.
B.Mus., Sherwin Music School, M.Mus., M.L.S., University of Illinois

Lisa Duncan-Raines
University Registrar.
B.S., M.S., Virginia Polytechnic Institute and State University

George R. Webb
Chief Information Officer. Professor of Physics, Computer Science and Engineering.
A.A., Old Dominion University; B.S., Massachusetts Institute of Technology; Ph.D., Virginia Polytechnic Institute and State University

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B.A., Saginaw Valley State University; M.A., Michigan State University; Ph.D. Indiana University

Biology, Chemistry and Environmental Science

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B.S., M.S., James Madison University; Ph.D., Virginia Polytechnic Institute and State University

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Fine Art and and Art History

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B.F.A., Richmond Professional Institute; M.F.A., Virginia Commonwealth University; Ph.D., Pennsylvania State University
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Government and Public Affairs

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Shumet Sishagne
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B.A., Haile Selassie University; M.A., Addis Ababa University; Ph.D., University of Illinois
Xiaoqun Xu
Associate Professor of History.
B.A, Shanghai Teachers College; M.A., East China Normal University; M.A. University of Akron; Ph.D., Columbia University

Mathematics

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Brian D. Bradie
Professor of Mathematics.
B.S., M.S., Ph.D., Clarkson University
Hongwei Chen
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B.S., Colorado State University; M.S., Ph.D., University of Pittsburgh

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B.S., Ph.D., University of Texas at Austin; M.S., Ph.D., University of South Carolina

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Gihan I. Mandour
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B.S., M.S., Ph.D., East China Normal University

Philosophy and Religious Studies

John A. Hoaglund
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Ph.D., Free University of Berlin

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Associate Professor of Psychology.
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B.S., Virginia Polytechnic Institute and State University; M.A., Ph.D., University of Arkansas

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Dorothy C. Doolittle
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Jeffrey A. Gibbons
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B.A., Western Michigan University; M.S., Ph.D., Kansas State University

Shelia P. Greenlee
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B.A., Norfolk State University; M.A., Ph.D., Ohio State University

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Timothy R. Marshall
Associate Professor of Psychology.
B.S., University of Idaho; M.S., Ph.D., Virginia Polytechnic Institute and State University
Andrew J. Velkey, II
Associate Professor of Psychology.
B.S., Millsaps College: M.A., Ph.D., University of Montana

Sociology, Social Work and Anthropology

Marcus B. Griffin
Assistant Professor of Anthropology and Sociology.
B.A., University of Hawaii; M.A., Ph.D. University of Illinois at Urbanna/Champaign

Teaching and Learning

Patricia L. Chappell
Lecturer.
B.A., University of Richmond; M.S., Old Dominion University
Sharon Ezzell
Lecturer.
B.S., M.A.T., Christopher Newport University
Deborah Farina
Lecturer.
B.S., The American University; M.A., Old Dominion University; M.Ed., The College of William and Mary
Linda Husbands
Lecturer.
B.S., M.S., Eastern Connecticut University
Susan A. Hutton
Lecturer.
B.A., University of New Mexico; M.A.T., Christopher Newport University
Keith W. Kuberek
Lecturer.
B.A., DuQuesne University; M.A., East Stroudsburg University; M.S.Ed., Old Dominion University
Yuevonne O. Lansinger
Lecturer.
B.S., Georgia Southern College; M.Ed., East Carolina University
Linda T. Morgan
Senior Lecturer.
B.S., Longwood College; M.Ed., Texas A&M University; D.Ed., Virginia Polytechnic Institute and State University
Gale M. Richardson
Lecturer.
B.A., Rosemont College; M.S., Queens College CUNY
Lois Winter
Lecturer.
B.S., The American University; M.A., Old Dominion University; M.Ed., The College of William & Mary

Theater and Dance

Steven Breese
Associate Professor of Theater Arts.
B.A., Baldwin Wallace College; M.F.A., California Institute of the Arts
Denise R. Gillman
Assistant Professor of Theater Arts.
B.F.A., West Virginia University; M.F.A., California Institute of Art
George Joseph Hillow, III
Associate Professor of Theater Arts.
A.B., Duke University; M.A. Memphis State University; M.F.A., Virginia Commonwealth University
Tanya E. Sweet
Assistant Professor of Theater Arts.
B.A., Beloit College; M.F.A., University of Illinois at Urbana-Champaign.

APPLICATION FORMS

Application for Admission to Graduate Study
Master's Degree Programs

Master of Science in Applied Physics and Computer Science

Computer Science

Computer Systems Engineering and Instrumentation

Applied Physics

Master of Science in Environmental Science

Master of Arts in Teaching with Licensure

Art	**PK - 12**
Biology	**6 - 12**
Computer Science	**6 - 12**
Elementary	**PK - 6**
English	**6 - 12**
French	**PK - 12**
History and Social Science	**6 - 12**
Mathematics	**6 - 12**
Music (Choral)	**PK - 12**
Music (Instrumental)	**PK - 12**
Physics	**6 - 12**
Spanish	**PK - 12**
Theater	**PK - 12**

Five-year Programs

Application forms for the 5 Year Baccalaureate to Master's Degree are available from the Graduate Program Coordinators.

CHECKLIST FOR APPLICATION TO CNU GRADUATE STUDY

ALL APPLICANTS must provide the following:

___ ***Application for Admission to Graduate Study***
___ Appropriate Application Fee (non-refundable)
___ ***Application for Virginia In-State Tuition Rates,*** if seeking entitlement to in-state tuition privileges

M.S. in Applied Physics and Computer Science

Degree-Seeking applicants must provide:

___ Official Transcript(s) from the institution awarding the baccalaureate degree
___ Official Transcript(s) from all graduate work taken at other institutions
___ Three (3) Letters of Recommendation
___ GRE Scores from the General Test (taken within 5 years prior to the date of admission) with a preferred combined score of 1000 or higher on the Verbal and Quantitative sections

M.S. in Environmental Science

Degree-Seeking applicants must provide:

___ Official Transcript(s) from the institution awarding the baccalaureate degree
___ Official Transcript(s) from all graduate work taken at other institutions
___ Three (3) Letters of Recommendation
___ GRE Scores from the General Test (taken within 5 years prior to the date of admission) with a preferred combined score of 950 or higher on the Verbal and Quantitative sections

Master of Arts in Teaching

Degree-Seeking applicants must provide:

___ Official Transcript(s) from the institution awarding the baccalaureate degree
___ Official Transcript(s) from all undergraduate and graduate work taken at other institutions
___ Three (3) Letters of Recommendation. These must be from professional educators who have observed the applicant's teaching or from professors who can attest that the applicant is likely to be able to be successful in graduate level academic work
___ PRAXIS I Test Scores (minimum composite score of 532)
___ A one page typed essay describing the applicant's purpose for entering the teaching profession

Non-Degree Applicants **(See exception for LICENSED TEACHERS in the Commonwealth of Virginia below)**

Non-Degree applicants must provide:

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

Non-Degree Applicants **who are LICENSED TEACHERS in the Commonwealth of Virginia**

Licensed Teachers must provide:

___ Copy of Official Transcript. See page 101.

All information should be sent to:

CNU Graduate Admissions
Administration Building Room 323
One University Place
Newport News, VA 23606-2998

CHRISTOPHER NEWPORT UNIVERSITY

APPLICATION FOR ADMISSION TO GRADUATE STUDY

Name of Applicant _____
(Please Print) Last name First name Middle/Former name

__ **Mr.** __ **Mrs.** __ **Ms.** __ **Male** __ **Female**

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

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

Mailing Address Until What Date _____ **E-Mail Address** _____

Daytime telephone number: _____ **Evening telephone number**:_____

Date of Birth: __ / __ / __ **Social Security Number** __ __ __ - __ __ - __ __ __ __

Citizenship:
__ U.S.Citizen __ Non-U.S.Citizen
If so, please complete a. and b.

a. Country of Citizenship: _____
*Please attach a copy of your Alien Registration Identification Card **or** a copy of your Visa if applicable.*

b. Permanent Resident Alien Registration # _____
or Visa Type: _____
or Political Refugee Status: _____

Ethnicity: *This information is requested for reports CNU submits to government agencies that collect data to ensure equal opportunity. You are not required to answer this question; however, your cooperation will be appreciated.*

__ Black __ American Indian __ Asian __ Hispanic __ White __ Other

APPLICATION INFORMATION: Indicate the semester or term you plan to begin graduate study

__ Fall ___ Spring ___ Summer Term I ___ Summer Term II ___ Summer Term III _____ Year

__ Full Time ___ Part Time ___ **Degree Seeking** Status _____ **NON**- Degree Status

__ Initial Application

__ Re-Admission _____ Semester/Year last attended CNU as a graduate student

__ Re-Open _____ Semester/Year admitted to Graduate Program but withdrew or did not attend

DEGREE PROGRAM:

___ **M.S. in APPLIED PHYSICS and COMPUTER SCIENCE** (Check concentration below)

___ Applied Physics ____ Computer Science _____ Computer Systems Engineering and Instrumentation

___ **M.S. in ENVIRONMENTAL SCIENCE**

___ **MASTER OF ARTS IN TEACHING WITH LICENSURE** (Check endorsement area below)

___ **Licensure Only** (Check endorsement area below) (Non-degree status) ___ **Teachers for Re-licensure or Professional Development** (Non-degree status)

____ Art (PK-6)
____ Biology (6-12)
____ Computer Science (6-12)
____ Elementary (PK-6)
____ English (6-12)
____ French (PK-12)
____ History & Social Science (6-12
____ Mathematics(6-12)
____ Music (Choral) (PK-12)
____ Music (Instrumental) (PK-12)
____ Physics (6-12)
____ Spanish (PK-12)
____ Theater(PK-12)

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

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

ACADEMIC INFORMATION:

List the college where you earned your bachelor's degree and colleges awarding graduate credit, begiinning with the most recent college. Failure to list the colleges required wil result in cancellation of your admission to the University and registration in class.

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

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

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

All Applicants Must Read and Sign:
By having submitted this form, the applicant certifies that, under the penalty of disciplianry action, that the information provided is true.

_____ _____
Signature of Applicant Month/Date/Year

***To determine eligibility for in-state tuition the *Application for Virginia In-State Tuition Rates* form must be submitted. Applications cannot be processed until the application fee and all required documents arrive.**

GRADUATE APPLICATION FEE FORM

Please complete but do not remove.

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

Application for: ____Fall ___ Spring ____ Summer _____ Year _____
Daytime Telephone Number

___Payment of the non-refundable $40.00 Graduate Degree-seeking Application Fee

___Payment of the non-refundable $35.00 Graduate Non-Degree Application Fee Check # _____

Money Order # _____

Office Use Only
ID #_____
Date:_____

CHRISTOPHER NEWPORT UNIVERSITY

Application for Virginia In-State Tuition Rates

This form should be completed if you are claiming entitlement to Virginia in-state tuition pursuant to section 23-7.4, Code of Virginia.
Supporting documents and additional information may be requested.
All Sections of the form must be completed and returned with the application for admission.

Section A – Part I

1. Name of Applicant: _____
Last First Middle

2. Social Security Number: ___ ___ ___ – ___ ___ – ___ ___ ___ ___

3. Date of Birth: ___ ___ / ___ ___ / ___ ___
Month Day Year

4. Citizenship: ☐ U.S. Citizen ☐ Permanent Resident Alien If non U.S., give Immigration Status/Visa Type: _____

5. Marital Status: _____ **6. Name of Parent/Legal Guardian or Spouse:** _____

Section A – Part II

1. Where have you lived in the last two years: (List current address first. Include dates.)

Street Address	City	State	Zip Code	From (MM/YY)	To (MM/YY)
				/	Current
				/	/
				/	/

2. Do your parents/legal guardian provide 50% or more of your financial support or claim you as a tax dependent? ☐ Yes ☐ No

3. A. If you are married, do you wish to claim eligibility for in-state tuition rates based on your spouse's domicile? ☐ N/A ☐ Yes ☐ No

B. If "Yes", does your spouse provide over 50% of your financial support? ☐ Yes ☐ No

4. Do any of the following characteristics apply to you? Place a check mark beside all that apply.

- ☐ Age 24 or older as of the first day of the term in which you intend to enroll
- ☐ Veteran or active duty member of the U.S. Armed Forces
- ☐ Graduate or first-professional student
- ☐ Ward of the court or was a ward of the court until age 18
- ☐ If both parents are deceased, no adoptive or legal guardian
- ☐ Legal dependents other than a spouse

Please continue to Section B: Domicile Information

Section B: Domicile Information

For the parent/legal guardian or spouse portion of this application, answer the questions about the parent upon whom you are dependent. **This parent/legal guardian must sign and date this application.** If you are claiming eligibility for in-state rates based on your spouse's domicile, you must answer the parent/legal guardian or spouse portion of this application about your spouse. **Your spouse must sign and date this application.**

5. Are you completing the shaded areas for your *(Check only one)*:
☐ Father ☐ Mother ☐ Legal Guardian ☐ Spouse

For questions 6-10, you must answer the "B" question if your response to the "A" question is "No."

	Student Yes	Student No	Parent, Legal Guardian or Spouse Yes	Parent, Legal Guardian or Spouse No
6. A. Have you been employed in Virginia for the past year?	☐	☐	☐	☐
B. If "No," were you employed in:				
Student: Another State: ____ Not Employed: ____				
Parent: Another State: ____ Not Employed: ____				
7. A. Was a tax return filed or income taxes paid to Virginia as a full/part-year resident on all earned income last year?	☐	☐	☐	☐
B. If "No," were taxes paid to:				
Student: Another State: _____ Didn't File: _____				
Parent: Another State: _____ Didn't File: _____				
8. A. Are you a registered voter in Virginia?	☐	☐	☐	☐
B. If "No," are you registered to vote in:				
Student: Another State: ____ Not Registered: ____				
Parent: Another State: ____ Not Registered: ____				
9. A. Do you hold a valid Virginia driver's license? Date Issued: _____	☐	☐	☐	☐
B. If "No" do you hold a license in:				
Student: Another State: _____ Not Licensed: ____				
Parent: Another State: _____ Not Licensed: ____				
10. A. Did you operate a motor vehicle registered in Virginia during the last year?	☐	☐	☐	☐
B. If "No," is it registered in:				
Student: Another State: ____ Not Registered: ____	☐	☐	☐	☐
Parent: Another State: ____ Not Registered: ____	☐	☐	☐	☐

	Student Yes	Student No	Parent, Legal Guardian or Spouse Yes	Parent, Legal Guardian or Spouse No
11. A. Are you a member of the U.S. Armed Forces? If "No," go to Section C: Additional Information.	☐	☐	☐	☐
B. Have income taxes been paid to Virginia on all military income for the last year?	☐	☐	☐	☐
If "No," have income taxes been paid to another state?	☐	☐	☐	☐
C. Does the current Leave/Earnings Statement reflect Virginia withholding?	☐	☐	☐	☐
If "Yes," effective date of change to Virginia: ____/____/____				

Section C: Additional Information

12. If your spouse is in the military, will you have: ☐ Question 12 is not applicable
A. Resided in Virginia for the past year? ☐ Yes ☐ No
B. Been employed and earned at least $10,300 during the past year? ☐ Yes ☐ No
C. Paid income taxes to Virginia on all earned income? ☐ Yes ☐ No

13. If you have lived outside Virginia for the past year, will you have: ☐ Question 13 is not applicable
A. Been employed in Virginia and earned at the least $10,300 during the past year? ☐ Yes ☐ No
B. Paid Virginia income taxes on all taxable income earned in Virginia during the past year? ☐ Yes ☐ No

14. If your parent/legal guardian is in the military, will the non-military parent/legal guardian have: ☐ Question 14 is not applicable
A. Resided in Virginia for the past year? ☐ Yes ☐ No
B. Been employed and earned at least $10,300 during the past year? ☐ Yes ☐ No
C. Paid income taxes to Virginia on all earned income? ☐ Yes ☐ No
D. Claimed you as a dependent for federal and Virginia income tax purposes? ☐ Yes ☐ No

15. If your parent/legal guardian has lived outside Virginia for the past year, will the parent/legal guardian have: ☐ Question 15 is not applicable
A. Been employed in Virginia and earned at least $10,300 during the past year? ☐ Yes ☐ No
B. Paid Virginia income taxes on all taxable income earned in Virginia during the past year? ☐ Yes ☐ No
C. Claimed you as a dependent for federal and Virginia income tax purposes? ☐ Yes ☐ No

Section D: Parent/Legal Guardian or Spouse Information

16. Where have you lived in the last two years? *(List current address first. Include dates.)*

Street Address	City	State	Zip Code	From (MM/YY)	To (MM/YY)
				/	Current
				/	/
				/	/

Section E: Certification and Signature(s)

I certify that all of the information I provided in this application is true and accurate. I understand that this application is a legally-binding document and that if I provide fraudulent information, I may be subject to repayment of tuition or dismissal. I agree to furnish the college or university with supporting documentation related to my application, if I am requested to do so.

_____ / / _____
Signature of Applicant **Date**

_____ / / _____
Signature of Parent/Legal Guardian or Spouse **Date**
(if required to furnish parental or spousal information)

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 Study*. Indicate your decision regarding a waiver of the right of access to this letter of recommendation before giving it to the person who will be submitting the recommendation. Give this form, along with a self-addressed and stamped envelope, to your reference. **Have the reference place the completed recommendation into the envelope, seal it, and sign across the seal.** The envelope may be returned to you, and you may return it with your application, or the reference may mail or bring the letter to Graduate Admissions. Advise your reference if the letter is also to be used as a recommendation for financial assistance.

Name_____
Last Name First Name Middle/Former

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

Degree Program _____Term & 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.

_____
Signature Date

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

_____
Signature Date

SECTION 2 (to be completed by reference)
Christopher Newport University values your comments on the suitability of this applicant to do graduate work and will hold your comments in confidence if the applicant has signed the above waiver.

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

_____

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

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

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

RECOMMENDATION

Christopher Newport University 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 fully characterize an applicant. Please give any additional comments in the space below. CNU would especially appreciate comments on the applicant's intellectual capability, motivation for seeking graduate education and prospects for completing graduate education (e.g. perseverance, work habits, organization). This form may also be used as a recommendation for financial assistance, such as teaching or research assistant or fellowships.

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

____ Highly recommended ____ Recommend with reservation

____ Recommend ____ Not recommended

Signature _____ Date _____

Please print name _____

Institution _____

Position _____ Telephone number/e-mail address _____

Please place the completed form in the addressed and stamped envelope provided by the applicant. **Be sure to seal the envelope and sign it across the seal before returning it to the applicant, or mailing or bring it to Graduate Admissions.**

Thank you for assisting Christopher Newport University with its graduate application process.

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

____ Recommend ____ Not recommended

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Please print name _____

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Position _____ Telephone number/e-mail address _____

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	Superior	Good	Average	Poor	Unknown
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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	___	___	___	___	___

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