



# COLLEGE OF HEALTH AND NURSING SCIENCES

## Graduate Programs

- **Biomechanics and Movement Science (M.S., Ph.D.)**
- **Health and Exercise Sciences (M.S.)**
  - Biomechanics
  - Exercise Physiology
  - Health Promotion

- **Nursing (M.S.N.)**
  - Clinical Nurse Specialist
  - Combined Clinical Nurse Specialist/Nurse Practitioner
  - Family Nurse Practitioner
  - Nursing Administration
  - Post Master's Nursing Certificate Program
- **Nutrition and Dietetics (M.S.) and Post-Baccalaureate Nutrition and Dietetics Program**

**T**he College of Health and Nursing Sciences offers graduate degrees through the Departments of Health and Exercise Sciences, Nursing, Nutrition and Dietetics, and the interdisciplinary Biomechanics and Movement Science Program.

Students have the opportunity for clinical experiences in a variety of student- and faculty-supported settings, including the Health Center, which provides older adults with a variety of health promotion and disease management services, and the Employee Wellness Center, offering programs encouraging University employees to make lifestyle decisions promoting optimal health.

### BIOMECHANICS AND MOVEMENT SCIENCE

Telephone: (302) 831-2252

**T**he Biomechanics and Movement Science program offers programs leading to master's and doctoral degrees. It is an interdisciplinary program that combines faculty and physical resources from several different units including the Department of Mechanical Engineering, the Department of Physical Therapy, the Department of Health and Exercise Sciences, the Sport Science Laboratory, the Center for Biomedical Engineering Research, and The A.I. duPont Hospital for Children. By implementing an interdisciplinary approach, the availability of faculty members with backgrounds in sport biomechanics, physical therapy, applied physiology, engineering, and computer science, affords students a much more diverse educational environment. In addition, the collective research laboratories of the participating units provide exposure to outstanding facilities. The laboratories of the Ice Skating Science Development Center, the Department of Physical Therapy, and the A.I. duPont Hospital for Children present an array of equipment for both upper and lower extremity biomechanics and movement studies.

### REQUIREMENTS FOR ADMISSION

**A**pplicants to the BIOMS program should meet the minimum recommended GRE requirements of 1050 on combined quantitative and verbal scores, and an undergraduate grade point index of 3.0. They are expected to have course experience in the areas of math (through calculus), anatomy/physiology, physics (2 semesters), and chemistry (2 semesters). See the Graduate Admissions chapter in this catalog for additional information.

Admission is selective and competitive based on the number of well-qualified applicants and the limits of available faculty and facilities. Those applicants who meet the stated minimum academic requirements for admission are not guaranteed admission, nor are those applicants who fail to meet those minimum requirements necessarily precluded from admission if they offer other appropriate strengths.

Applicants will be directed to faculty with appropriate expertise. Once a faculty advisor has been secured, prospective students must submit a proposed program of study to the BIOMS graduate committee. Applicants will be considered for admission to the BIOMS program provided that they 1) meet all admission requirements of the Office of Graduate Studies and the BIOMS program, 2) are successful in securing a faculty advisor, and 3) receive approval on their proposed program of study from the BIOMS graduate committee.

### FINANCIAL AID

**F**inancial assistance for students in the BIOMS program is obtained from a variety of external sources and will therefore vary in form and availability. Assistance will be awarded on a competitive basis to applicants best fitting the needs of the granting agencies and sponsoring faculty. Students receiving full stipends will be expected to work up to 20 hours per week on faculty projects, and

are expected to maintain full-time status. Please refer to the chapter "Graduate Fellowships and Assistantships" in this catalog for more information.

### REQUIREMENTS FOR THE DEGREES

**P**rograms of study are created to serve the interests of both the student and sponsoring faculty member, and may focus on topics in the areas of Biomechanics, Motor Control, Applied Physiology, Exercise Physiology, and Rehabilitation Technology. Core courses for all areas of study include 2 (M.S.) or 3 (Ph.D.) semesters of BIOMS seminar, an experimental design/statistics course, a course in computing, laboratory instrumentation or engineering applications, and two courses outside the principal area of study.

The Master's degree program requires 24 credit hours of coursework (including BMSC 801 and BMSC 868) plus 6 credit hours of thesis. The student's program of study should be created by the student and his/her advisor as part of the admission process. This program of study must be reviewed and approved by the BIOMS Graduate Committee. The thesis committee must consist of at least three BIOMS faculty members, and at least one of the committee members must be from a different department than that of the advisor. Prior to conducting the thesis research, the student must successfully defend the thesis proposal before the BIOMS faculty. The final thesis defense must then be approved by the thesis committee.

The Ph.D. program requires 33 credit hours of coursework (including BMSC 801 and BMSC 868) beyond the Master's degree plus 9 credit hours of dissertation. A student entering the Ph.D. program without a Master's degree must complete a minimum of 63 credit hours of coursework plus 9 credit hours of dissertation. As with the Master's degree, the student's program of study should be created by the student and his/her advisor as part of the admission process. This program of study must then be reviewed and approved by the BIOMS Graduate Committee. The dissertation committee must consist of at least three BIOMS faculty members one of whom must be from a department different than that of the advisor, and one committee member from outside the BIOMS program. Please refer to the program policy statement for more specific details regarding dissertation committee membership. Prior to conducting the dissertation, the student must successfully defend the dissertation proposal. The defense of the dissertation proposal constitutes the qualifying examination for candidacy into the Ph.D. degree program. Candidacy is completed when the student successfully defends the dissertation.

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## HEALTH AND EXERCISE SCIENCES

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Telephone: (302) 831-2252

**T**he department offers graduate programs leading to a Master of Science degree in Physical Education with Biomechanics or Exercise Physiology as major areas of study, and a Master of Science in Health Promotion. Graduates of the programs enjoy careers in academia, research, coaching, gait analysis, cardiac rehabilitation, corporate wellness, and fitness management, among others.

The well equipped research facilities include a sport science laboratory. A three-dimensional video system, EMG, treadmill/gas analysis units, force platforms, and force transducers are available, and these afford the student the opportunity to study a wide variety of human performance parameters. Additional facilities include two fitness centers which provide modern facilities to support instruction in all phases of the graduate program.

Research opportunities are available in the Ice Skating Science Development Center. Testing of elite skaters occurs on a regular basis and includes the areas of exercise physiology, sports psychology, nutrition, biomechanics, and sports medicine. The Department offers

additional research through its partnership with the Physical Therapy and Mechanical Engineering Departments and the A.I. duPont Institute in the interdisciplinary Orthopedic and Biomechanical Engineering Center.

### ADMISSION REQUIREMENTS

1. A bachelor's degree based on a four-year curriculum in an accredited college or university.
2. Acceptable undergraduate transcripts.
3. The equivalent of an undergraduate major in physical education or related discipline.
4. Three letters of recommendation indicating the capability, interest, maturity, and scholarly potential of the candidate for graduate study.
5. Acceptable GRE scores (over 1050 combined math and verbal scores).

Admission is selective and competitive, based on the number of well-qualified applicants and the limits of available faculty and facilities. Those who meet stated minimum academic requirements are not guaranteed admission, nor are those who fail to meet those requirements necessarily precluded from admission if they offer other appropriate strengths. See the Admission Information chapter in this catalog for additional information.

### REQUIREMENTS FOR THE DEGREES

**S**tudents selecting the master of science program may complete degree requirements on a full- or part-time basis. Each student, with the assistance of an advisor, must develop and pursue a program of study designed around one of the areas of study (biomechanics of sports, exercise physiology, or health promotion). These programs must be approved by the Department's graduate committee during the student's second semester of graduate study.

Individuals will choose an area of emphasis from among those offered and will conduct research and write a thesis. The student and an advisor will design a program featuring 15 credits within the program, 6 credits in cognate areas outside the program, 3 credits within or outside the program and 6 credits of thesis.

All students in the M.S. program in Physical Education will be required to successfully complete HPER 601 Research Methods and HPER 602 Statistics. In addition, students in the M.S. program must meet specific course requirements as described in the Department's Academic Programs Policy Statement.

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## NURSING

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Telephone (302) 831-1255

**T**he Department of Nursing offers a program leading to a Master of Science in Nursing (M.S.N.) degree and Post-Master's Certificates. The program is designed to prepare Clinical Nurse Specialists (CNS), Nurse Administrators, Family Nurse Practitioners (FNP), and combined CNS/Nurse practitioners. Clinical specialization in the CNS concentration is offered in gerontology, cardiopulmonary, oncology/immune deficiency, pediatrics, and perinatal/ women's health. Nursing administration prepares nurses for leadership positions as nurse managers at a variety of levels. The Family Nurse Practitioner concentration prepares nurses to provide primary health care to clients of all ages. The combined CNS/NP programs combine the knowledge of the CNS with the skills of a nurse practitioner within the specialty. Post-master's certificate programs are available in all specialties for students who already hold a Master of Science in

Nursing degree. All graduates will be qualified to sit for the national certifying examinations.

The graduate program includes core concepts of advanced practice nursing as well as concepts specific to the area of specialization. The curriculum is built on the theories and professional practice students have obtained at the baccalaureate level of nursing education and provides a foundation for future doctoral study.

Independent and interdependent functions of nursing are emphasized as important in achieving the health goals of individuals, families, and communities. Thus, graduates of the program are prepared to improve the quality of nursing practice and to influence the delivery of health care. Clinical resources of the department include a wide variety of facilities in Delaware, Pennsylvania, Maryland, and New Jersey.

The majority of students attend classes on a part-time basis. All classes are held after 3:00 p.m., in order to accommodate working nurses. Alternative delivery methods are available for selected courses, including videotaping.

The programs offered by the Department of Nursing are fully accredited by the National League for Nursing Accrediting Commission. The address of the National League for Nursing is 360 Hudson Street, NY, NY 10014. (212) 989-9393.

## REQUIREMENTS FOR ADMISSION TO THE MASTER'S PROGRAM

To be considered for admission, applicants are expected to have a baccalaureate degree in nursing from an NLN accredited school of nursing. Applicants are evaluated on the following criteria: (1) satisfactory performance in undergraduate academic work as well as in upper-division nursing courses; (2) satisfactory performance on the GREs; (3) completion of an undergraduate statistics course; 4) a total of three academic and/or professional references; 5) licensure as a registered nurse in Delaware or in the state where clinical practice is to be arranged; and 6) an interview with a faculty member from the graduate program. For foreign students, a minimum score of 600 on the Test of English as a Foreign Language is recommended.

One year of recent clinical experience is required prior to starting the clinical courses. For CNS and NP students, completion of an undergraduate health assessment course is recommended. All applicants are considered on an individual basis.

Admission is selective and competitive based on the number of well-qualified applicants and the limits of available faculty and facilities. Those who meet stated minimum academic requirements are not guaranteed admission, nor are those who fail to meet those requirements necessarily precluded from admission if they offer other appropriate strengths. See the Graduate Admissions chapter in this catalog for additional information.

## REQUIREMENTS FOR THE DEGREE

Students in the Clinical Nurse Specialist and Nursing Administration concentrations must complete 34 credit hours of graduate study for the M.S.N. Those pursuing the Family Nurse Practitioner concentration and combined CNS/NP programs must complete 43 credit hours. All students take at least 15 credits of core courses and research.

Students have the option of writing either a thesis or a non-thesis scholarly project to meet the program requirements or they may complete a Research Dissemination course. Those who choose to write a thesis conduct the necessary research and receive six credits (NURS 869) for the completed study.

Core Courses for all Programs		Credits
NURS 803	Theoretical Foundations of Nursing	3
NURS 804	Advanced Nursing Practice: Roles and Issues	3

NURS 810	Research Methods in Nursing	3
EDUC 665	Elementary Statistics	3
Three credits from among the following:		
NURS 868	Scholarly Projects	3
NURS 869	Master's Thesis	6
NURS 887	Application of Research in Nursing	3
TOTAL CORE CREDITS		15

## CLINICAL NURSE SPECIALIST Credits

Core Courses		15
NURS 820	Advanced Health Assessment	3
NURS 821	Advanced Pathophysiology	3
NURS 886	Clinical Nurse Specialist Role Integration	4

## REQUIRED COURSES FOR EACH SPECIALITY

### Nursing of Children

NURS 854	Nursing of Children I	3
NURS 855	Nursing of Children II	3

### Gerontologic Nursing

NURS 831	Comprehensive Assessment of Older Persons	3
NURS 832	Health Promotion, Disease Prevention and Disease Management for Older Persons	3

### Cardiopulmonary Nursing

NURS 840	Cardiopulmonary Nursing I	3
NURS 841	Cardiopulmonary Nursing II	3

### Perinatal/Women's Health Nursing

NURS 850	Nursing of Women and Newborns I	3
NURS 851	Nursing of Women and Newborns II	3

### Oncology/Immune Deficiency Nursing

NURS 845	Oncology/Immune Deficiency Nursing I	3
NURS 846	Oncology/Immune Deficiency Nursing II	3

TOTAL CREDITS REQUIRED 34

## FAMILY NURSE PRACTITIONER

Credits

Core Courses		15
NURS 820	Advanced Health Assessment	3
NURS 821	Advanced Pathophysiology	3
NURS 822	Advanced Pharmacology	3
NURS 823	Management of Women's Health Care	3
NURS 824	Management of Children's Health	3
NURS 825	Management of Adult Episodic Health Needs and Problems	3
NURS 826	Management of Adult Chronic Health Needs and Problems	3
NURS 827	Preceptorship	6
NURS 828	Nurse Practitioner Seminar	1
TOTAL CREDITS NEEDED		43

## COMBINED CLINICAL NURSE SPECIALIST/NURSE PRACTITIONER

Credits

Core Courses		15
NURS 820	Advanced Health Assessment	3
NURS 821	Advanced Pathophysiology	3
NURS 822	Advanced Pharmacology	3
NURS 827	Preceptorship	6
NURS 828	Nurse Practitioner Seminar	1

## REQUIRED COURSES FOR EACH SPECIALITY

### Nursing of Children/Pediatric Nurse Practitioner

NURS 854	Nursing of Children I	3
NURS 855	Nursing of Children II	3
NURS 824	Management of Children's Health	3
NURS 830	Advanced Management of Children and Adolescent Health Care Needs	3

**Gerontologic Nursing/Geriatric Nurse Practitioner**

NURS 831	Comprehensive Assessment of Older Persons	3
NURS 832	Health Promotion, Disease Prevention and Disease Management for Older Persons	3
NURS 825	Management of Adult Episodic Health Needs	3
NURS 826	Management of Adult Chronic Health Needs	3

**Cardiopulmonary Nursing/Adult Nurse Practitioner**

NURS 840	Cardiopulmonary Nursing I	3
NURS 841	Cardiopulmonary Nursing II	3
NURS 825	Management of Adult Episodic Health Needs	3
NURS 826	Management of Adult Chronic Health Needs	3

**Perinatal/Women's Health Nursing/****Women's Health Nurse Practitioner**

NURS 850	Nursing of Women and Newborns I	3
NURS 851	Nursing of Women and Newborns II	3
NURS 823	Management of Women's Health Care	3
NURS 829	Advanced Management of Women's Health Care	3

**Oncology/Immune Deficiency****Nursing/Adult Nurse Practitioner**

NURS 845	Oncology/Immune Deficiency Nursing I	3
NURS 846	Oncology/Immune Deficiency Nursing II	3
NURS 825	Management of Adult Episodic Health Needs	3
NURS 826	Management of Adult Chronic Health Needs	3

TOTAL CREDITS NEEDED 43

**NURSING ADMINISTRATION****Credits**

Core Courses		15
Elective		6
NURS 819	Nursing Administration: Accounting, Finance and Organizational Budgets	3
NURS 836	Organizational Theories and Nursing Administration	3
NURS 837	Organizational Goals and Planning Strategies	3
NURS 838	Nursing Management and Evaluation	4
TOTAL CREDITS NEEDED		34

**POST MASTER'S CERTIFICATE OPTION**

Post Master's Certificate programs are available in all specialties. The Post Master's Certificate option is designed to provide individuals who already hold a Master of Science in Nursing degree with the core courses and clinical experiences necessary for eligibility for advanced certification. The number of credits varies with the area of concentration and the student's past academic record. Students must complete all course requirements within five years of matriculation into the Post Master's program.

**APPLICATION PROCESS FOR POST MASTER'S CERTIFICATE PROGRAMS**

To apply to the post-master's certificate programs, applicants must submit an application and an official transcript of undergraduate and master's degrees to the University of Delaware. Three letters of recommendation should be sent to the Graduate Program at the Department of Nursing. An interview with a faculty member is also required.

**COURSE REQUIREMENTS****NURSING ADMINISTRATION****13 Credits**

NURS 819	Nursing Administration: Accounting, Finance, and Organizational Budgets	3
NURS 836	Organizational Theories and Nursing Administration	3
NURS 837	Organizational Goals and Planning Strategies	3
NURS 838	Nursing Management and Evaluation	4

**CLINICAL NURSE SPECIALIST****16 Credits****All tracks require:**

NURS 820	Advanced Health Assessment	3
NURS 821	Advanced Pathophysiology	3
NURS 886	Clinical Nurse Specialist Role Integration	4

**Nursing of Children**

NURS 854	Nursing of Children I	3
NURS 855	Nursing of Children II	3

**Gerontologic Nursing**

NURS 831	Comprehensive Assessment of Older Persons	3
NURS 832	Health Promotion, Disease Prevention and Disease Management for Older Persons	3

**Cardiopulmonary Nursing**

NURS 840	Cardiopulmonary Nursing I	3
NURS 841	Cardiopulmonary Nursing II	3

**Perinatal/Women's Health Nursing**

NURS 850	Nursing of Women and Newborns I	3
NURS 851	Nursing of Women and Newborns II	3

**Oncology/Immune Deficiency Nursing**

NURS 845	Oncology/Immune Deficiency Nursing I	3
NURS 846	Oncology/Immune Deficiency Nursing II	3

**FAMILY NURSE PRACTITIONER****23 Credits**

NURS 820	Advanced Health Assessment	3
NURS 821	Advanced Pathophysiology	3
NURS 822	Advanced Pharmacology	3
NURS 823	Management of Women's Health Care	3
NURS 824	Management of Children's Health	3
NURS 825	Management of Adult Episodic Health Needs and Problems	3
NURS 826	Management of Adult Chronic Health Needs and Problems	3
NURS 827	Preceptorship	6
NURS 828	Nurse Practitioner Seminar	1

**SPECIALIST/NURSE PRACTITIONER****22 Credits****All tracks require:**

NURS 820	Advanced Health Assessment	3
NURS 821	Advanced Pathophysiology	3
NURS 822	Advanced Pharmacology	3
NURS 827	Preceptorship	6
NURS 828	Nurse Practitioner Seminar	1

**Adult Nurse Practitioner**

NURS 825	Management of Adult Episodic Health Needs and Problems	3
NURS 826	Management of Adult Chronic Health Needs and Problems	3

**Pediatric Nurse Practitioner**

NURS 824	Management of Children's Health	3
NURS 830	Advanced Management of Children and Adolescent Health Care Needs	3

**Women's Health Nurse Practitioner**

NURS 823	Management of Women's Health Care	3
NURS 829	Advanced Management of Women's Health Care	3

**Geriatric Nurse Practitioner**

NURS 825	Management of Adult Episodic Health Needs and Problems	3
NURS 826	Management of Adult Chronic Health Needs and Problems	3

## NUTRITION AND DIETETICS

Telephone: (302) 831-8729

The Department of Nutrition and Dietetics offers a program leading to a Master of Science degree in Human Nutrition (with thesis and non-thesis options) as well as a post-baccalaureate dietetic internship certificate program. Resources for research and teaching in the Department of Nutrition and Dietetics include access to a wide range of laboratory, library and computer capabilities. Linkages available to support graduate research opportunities include the University Adult Day Care Center, Delaware Cooperative Extension, Delaware Center for Wellness, the State Division of Aging, the State Division of Public Health, the University Wellness Center, and local health care facilities.

Interdisciplinary work is encouraged. There is opportunity for close liaison with programs in Individual and Family Studies, Animal and Food Sciences, Chemistry and Biochemistry, Biological Sciences, Nursing, and Health and Exercise Sciences.

### REQUIREMENTS FOR ADMISSION

Requirements for admission to the master's degree program include an undergraduate cumulative index (based on a 4.0 system) of 2.75 with a 3.00 average in the major field. Applicants to the thesis option are expected to have a total score (verbal plus quantitative) of 1050 or higher on the Graduate Record Examination. Non-thesis applicants require a GRE of 900 or higher. A TOEFL score of 575 or better is required for international students. Three letters of reference from individuals able to evaluate the applicant's potential for successful graduate work are also necessary to complete the application file. See also the chapter "Graduate Admissions" in this catalog.

Prerequisite courses to regular status include: human or animal physiology, inorganic and organic chemistry, biochemistry (preferably with lab), and one semester of human nutrition having a biochemistry prerequisite. Students planning to pursue thesis research topics related to social science aspects of nutrition and food habits should have some courses in sociology, psychology, anthropology, etc.

Students seeking to enter the program from undergraduate majors other than nutrition should expect to take prerequisite courses in sciences and nutrition prior to admission on regular status.

Applications are reviewed as they are completed. To assure eligibility for course registration as a matriculated graduate student, files should be *complete* at least two months prior to the start of the regular semester session. Admission to the program is selective and competitive based on the number of applicants and limits of available faculty and facilities. Those who meet minimum academic requirements are not guaranteed admission.

### FINANCIAL AID

A limited number of teaching assistantships/tuition scholarships is available on a competitive basis. To be eligible the student must complete an application file and must be qualified for admission in regular status. Funding decisions are made separately from admission decisions. First priority is given to thesis students. Please refer to the chapter "Graduate Fellowships and Assistantships" in this catalog for more information.

### REQUIREMENTS FOR THE DEGREE

#### Thesis Option

A minimum of 32 credits at the graduate level is required, 6 of which are thesis-related and 14-17 credits in the Department of Nutrition and Dietetics (2 seminar credits and 12-15 course credits). The remaining credits are obtained through courses in related areas such as chemistry, biology, statistics/experimental design, food science, physical educa-

tion, psychology, sociology, anthropology, communication, etc. Selection of these courses will depend in part on the specific needs of the student and on the student's professional or research interests.

Core course requirements include: NTDT 611 (Advanced Nutrition), a graduate level biochemistry course, and a graduate level course in statistics/experimental design.

Degree completion also requires: 1) presentation of thesis research results in seminar format to the departmental faculty, 2) submission of manuscript draft for publication, and 3) satisfactory performance on the final oral examination.

#### Non-Thesis Option

A minimum of 35 credits at the graduate level is required, including 17 credits in the Department of Nutrition and Dietetics and a 3 credit field study. The remaining 15 credits are obtained through non-departmental courses in related areas. Degree completion also requires satisfactory performance on a comprehensive examination and presentation of field study at a department seminar.

### DIETETIC INTERNSHIP CERTIFICATE PROGRAM

A post-baccalaureate dietetic internship developed in cooperation with the Delaware Division of Public Health provides an in-depth experience in clinical nutrition, food service management, and public health nutrition. Evaluation of eligibility for admission is made by a departmental faculty review committee. Evidence of completion of a baccalaureate degree and courses required as part of the degree-granting didactic program must be provided as part of the application. Acceptance into the internship is on a competitive basis. Applications are read and evaluated by an internship acceptance committee who use a numerical rating scale. Students who provide evidence of a considerable amount of work experience in a professional capacity may be accepted based on the merits of their total application even if the undergraduate grade point average is less than the desired minimum.

Prospective students should submit a completed application form, transcript(s) of all undergraduate and post-baccalaureate course work, Graduate Record Examination (GRE) scores, and three references from individuals able to evaluate the applicant's potential for successful completion of the internship. Admission to regular status requires 1) GRE scores of 900 or higher (verbal plus quantitative); 2) overall undergraduate grade point average (GPA) of 2.75 or higher; 3) undergraduate GPA of 2.75 or higher in major courses. Students applying for this experience must have completed the courses necessary for American Dietetic Association verification.

Students are required to participate in a two-week orientation at the beginning of the internship and to earn a total of 12 credits. Students must complete two academic semesters consisting of 38 hours per week of supervised clinical practice: NTDT 550 (fall, 4 credits) and NTDT 551 (spring, 4 credits). In addition, students must complete a 2-hour interactive distance learning seminar each week during both semesters: NTDT 650 (fall, 2 credits) and NTDT 651 (spring, 2 credits). Of the 12 credits required to complete the certificate program, only the four credits from NTDT 650 and 651 may be applied toward the Master's degree. Additional information regarding progress evaluation and retention/termination policies are available from the department office.

