College of Education, Nursing and Health Professions

The five departments of the College of Education, Nursing and Health Professions form an academic unit that provides students with a comprehensive educational experience. Faculty members employ resources and facilities both on campus and within the community to offer baccalaureate programs in the service-oriented professions of clinical laboratory science, education, health science, nursing, radiologic technology, and respiratory care. The Department of Health Sciences offers undergraduate articulation programs leading to graduate study in chiropractic, optometry, osteopathic medicine, and podiatry. The Department of Physical Therapy offers a combined Bachelor of Science in Health Science/Doctor of Physical Therapy program and a combined Bachelor of Science in Health Sciences/Master of Science in Prosthetics and Orthotics (see page 290 for undergraduate information and the Graduate Bulletin for information on the doctoral program).

Programs within the college are accredited through the appropriate nationally recognized agencies (see page 11) and use a wide variety of resources to provide the student with outstanding educational experiences. Programs integrate classroom study and practical experience. Faculty members within the college hold professional and graduate-level degrees and have extensive practical experience. The small-class environment, combined with a personal advising and counseling system, allows each student to prepare successfully for a career in a chosen service-oriented profession.

*Upper-level B.S.N. program for registered nurses only.

Admission Requirements

General requirements and procedures for admission are given on page 39.

Each department within the College of Education, Nursing and Health Professions has its own admission requirements. Refer to department information for specifics.

GPA Standards

Students are expected to meet or exceed the following cumulative grade point average (GPA) and credit-hour requirements. Falling below these standards will result in academic probation.

- 0–23 hours: 1.8
- 24–53 hours: 1.9
- More than 54 hours: 2.0

Honors Program

For an overview of the University-wide Honors program and specific program requirements for ENHP students, see Special Academic Opportunities, page 19.

Degree Requirements

The College of Education, Nursing and Health Professions offers programs of study leading to the following undergraduate degrees: Associate in Science, Bachelor of Arts, Bachelor of Science, and Bachelor of Science in Nursing. The requirements include three components: general education requirements for all baccalaureate degree candidates, including the All-University Curriculum (see page 79); courses in a major area of specialization; and a number of elective courses.

All-University Curriculum (AUC)

Each student completes a minimum of one course in four of the following five categories. Each department will determine which categories are required for its students.

The AUC is described in detail on page 79.

Living in a Scientific and Technological World (AUCT) [3–4]
Living in a Cultural Context: Western Heritage (AUCW) [3]
Living in a Cultural Context: Other Cultures (AUCC) [3]
Living Responsively to the Arts (AUCA) [3]
Living in a Social Context (AUCS) [3]

Transfer students will meet the AUC credit requirements, in accordance with the following guidelines:

<table>
<thead>
<tr>
<th>Credits transferred</th>
<th>AUC courses required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fewer than 23</td>
<td>4</td>
</tr>
<tr>
<td>24–53</td>
<td>2</td>
</tr>
<tr>
<td>More than 53</td>
<td>0</td>
</tr>
</tbody>
</table>

Students enrolled in the Department of Education and Human Services must take at least one-half of their required AUC courses for a letter grade.
Intercollegiate transfers will be evaluated on an individual program basis for AUC requirements.

Undergraduate Programs

The Department of Education and Human Services offers a Bachelor of Arts in Secondary English Education, as well as Bachelor of Science degree programs in Early Childhood and Elementary Education and in Human Services. The Department of Education and Human Services’ Integrated Elementary Education/Special Education Bachelor of Science program allows students to become certified in both elementary education and special education.

A Bachelor of Arts in Secondary Mathematics is offered through the College of Arts and Sciences.

The Department of Health Sciences offers an Associate in Science degree program in Health Science and Bachelor of Science degree programs in Health Science, Clinical Laboratory Science, Respiratory Care, Radiologic Technology, and Health Science for Pre-Chiropractic, Pre-Optometry, Pre-Osteopathic Medicine, and Pre-Podiatry.

The Department of Physical Therapy offers a health science degree that leads to either a Doctor of Physical Therapy or a Master of Science in Prosthetics and Orthotics.

The Department of Nursing offers the Bachelor of Science in Nursing. It is an upper-level program designed for nurses who currently hold the registered nurse (RN) license.

Minor programs are available in education and human services (see page 253). Interested students should consult an advisor in the Department of Education and Human Services. An intercollegiate minor in health studies is also available (see page 162).

Elective Courses

In addition to credits required in general education and the major, students complete any remaining credits in unrestricted electives. They may, however, take no more than two courses in physical education for credit from courses that are labeled as PE 110 and/or PE 111. Other academic courses in physical education may be taken for credit with the approval of the advisor and course instructor, or as part of a planned program.

Experiential Education Program

The University’s Experiential Education (co-op) program (see page 17) is open to education and human services majors and students in clinical laboratory science/medical technology. Students must have permission from the appropriate departmental co-op faculty coordinator to be eligible for the program.

All co-op students work full or part time. Academic credit is awarded and applied toward degree requirements as unrestricted elective courses. Co-op is graded on a Pass/No Pass basis.

University of Hartford Magnet School

The University of Hartford Magnet School, a Hartford interdistrict magnet school, is a public magnet school on the University’s private campus. Fifty percent of the students attending this school come from Hartford; the remaining students are selected by lottery. The school serves children from preschool through grade 5, who attend an extended school day.

The magnet school’s curriculum is framed in the context of Howard Gardner’s theory of multiple intelligences. This theory supports the concept that all children have several intelligences, not just the linguistic and mathematical intelligences normally addressed by schools, and that these intelligences need to be nurtured to enable children to learn through their strengths while enhancing their weaker abilities.

The school serves as a model school for service learning, practica, internships, and student teaching for University students in teacher education programs and the human services program. Students from the nursing programs as well as from the health professions are involved in the magnet school, which also houses a family and wellness center.

The Esphyr Slobodkina Reading Room

Esphyr Slobodkina was a 1928 immigrant to our country from the small Siberian town of Cheliabinsk. She came to be not only a well-loved and respected children’s author/illustrator but also one of America’s greatest abstract artists. Her history and accomplishments are an inspiration for our teachers, elementary students, and the education community. The reading room dedicated in her name is available for reading to large and small groups of children and their parents, for conducting workshops for parents
on reading to children, and for arts-related programming for children.

**Educational Main Street**

In 1990 the University of Hartford initiated Educational Main Street (EMS) to create a learning community across four levels of education. The continuum that is created by the connection of public schools and the University of Hartford takes advantage of the proximity of schools that are near the campus. EMS seeks to minimize barriers that traditionally exist between black and white; between elementary, middle, and secondary teachers and university faculty; and between public schools and private higher education. Its array of initiatives and activities seeks to keep students in school by engaging them in an education continuum that stretches from kindergarten to graduate school.

The collaborations between these schools can provide youngsters with learning and teaching opportunities at other partner schools and the university campus. Many University students serve as tutors or classroom assistants through EMS each semester. EMS provides opportunities for curriculum collaboration and professional development for teachers at all levels and empowers teachers to create change and implement school reform.

**University Physical Therapy, LLC**

Located in the Sports Center, University Physical Therapy, LLC, a private-practice corporation, is available for referrals. The facility is used by degree candidates in physical therapy for integrated clinical experiences.

---

**Graduate Courses**

Seniors in good standing are eligible to take selected graduate courses in the College of Education, Nursing and Health Professions with the permission of their advisor and the course instructor.

**Graduate Programs**

The Department of Education and Human Services offers graduate programs in the following areas: educational technology, early childhood education, and elementary education.

A Doctor of Education (Ed.D.) is available to students through the Department of Educational Leadership.

The Department of Nursing offers a Master of Science in Nursing. Students may focus on management, nursing education, and public health nursing.

The Department of Physical Therapy offers combined degree programs leading to a Bachelor of Science in Health Science/Doctor of Physical Therapy and a Bachelor of Science in Health Science/Master of Science in Prosthetics and Orthotics.

The Doctor of Physical Therapy and the Master of Science in Prosthetics and Orthotics programs are described in detail in the *University of Hartford Graduate Bulletin*. 
Department of Education and Human Services

The Department of Education and Human Services prepares students for careers in teaching and human services by providing opportunities to develop critical knowledge and relevant professional skills while engaged in reflective practice. The department offers undergraduate programs in Early Childhood, Elementary, Secondary English, Integrated Elementary Education/Special Education, and Human Services. In addition to on-campus courses and learning experiences, programs in the department include service learning, internships, practica, and student teaching, conducted in conjunction with education and social-service agencies in Greater Hartford.

The College of Arts and Sciences offers a program in Secondary Mathematics Education (see page 181). The Hartt School offers a program in Music Education (see page 386 for details).

Advising

The Department of Education and Human Services has established dialogue groups to introduce incoming first-year and transfer students to the University of Hartford, its community, and the many educational and enrichment opportunities available to students on and off campus. A faculty advisor and a small group of students meet in informal settings at least one hour a week for 11 sessions during the fall semester to familiarize students with the University of Hartford and the Department of Education and Human Services as well as to discuss educational and career goals. All students are assigned an academic advisor, and with the advisor’s help, determine a major by the end of their sophomore year. A close working relationship between advisor and advisee helps ensure the student’s academic success.

Transfer Students

Transfer student programs are designed individually, with consideration given to academic history and to the specific program into which a student is transferring. Transfer students may be required to spend additional semesters to complete their programs. Due to stringent state requirements for teacher certification, transfer students should plan their programs carefully and keep in regular, close contact with academic advisors to meet the college’s cumulative grade point average requirements.

Educational Technology Laboratory

The Educational Technology Laboratory, located in Hillyer Hall, houses state-of-the-art equipment and educational software. Supportive educational materials are available for our students and area teachers to preview. Students staff the laboratory and maintain records of facility use.

The Curriculum Laboratory

Housed in the Mortensen Library, the Education Curriculum Laboratory contains a recently updated collection of texts and instructional materials representative of those used in area school systems. Materials are available for use by teachers and students.

Service Learning

The Department of Education and Human Services and several Greater Hartford school systems and human service agencies have established relationships that have resulted in many innovative programs in teacher education and human service fields. These relationships reflect the college’s commitment to serving school and community needs by making full use of the talents of students and faculty.

Students’ involvement in service learning begins in the introductory courses and continues throughout their academic career, finishing with a culminating field experience.

Teacher education programs include extended periods of integrated professional instruction and experience in local public schools, providing the opportunity for students to apply knowledge and skills. The human services major includes two extended internships in area agencies.

Accreditation and Memberships

NCATE and State of Connecticut
Certification programs in the Department of Education and Human Services are approved by the National Council for Accreditation of Teacher Education (NCATE) as well as the State of Connecticut Department of Education.

CT-AACTE
The American Association of Colleges for Teacher Education, Connecticut chapter (CT-AACTE), is an organization of colleges and universities approved for the preparation of professional personnel for the public schools. The organization meets regularly to discuss issues of mutual concern and advises the state Board of Education and the commissioner for higher education on important issues in teacher education and personnel preparation.
Admission Requirements
General requirements and procedures for admission are given on page 39.

For admission to the Department of Education and Human Services, 16 units of secondary subjects are expected and should include the following as minimal:

- English: 4 units
- Social studies: 2 units
- One language: 2 units
- Science: 2 units
- Mathematics (including one unit of algebra): 2 units
- Other academic subjects: 4 units

Programs for Bachelor of Science and Bachelor of Arts
The Department of Education and Human Services prepares students for careers in education and human services, operating on the model of the reflective practitioner.

In the first two years, the student receives broad exposure to general or liberal arts courses and completes introductory professional preparation courses. In the third and fourth years the student concentrates on advanced courses in a chosen major and on internships in schools or community agencies. The need of all teachers and helping professionals for a broad liberal arts education as well as sound professional preparation calls for careful planning of academic programs.

Connecticut and many other states require that the preparing institution recommend candidates for certification on the basis that they are personally and professionally qualified. Students will therefore find their knowledge, skills, and dispositions assessed throughout their programs on the basis of qualitative standards of performance in a variety of structured and unstructured experiences.

Praxis I: Pre-Professional Skills Test (PPST): Academic Skills Assessments for Prospective Teachers
The Praxis I test, (PPST and CPPST [computerized version]), has been implemented by the State of Connecticut to ensure that candidates for teacher preparation programs are competent in skills (mathematics, reading, and writing) that are considered essential for teacher education candidates. All teacher education candidates, therefore, must either achieve a satisfactory score on all three components of the Praxis I PPST exam or be eligible for and receive a Praxis I waiver (see details below). Candidates who do not meet waiver requirements must pass the Praxis I exam in order to be accepted into the professional teaching program. Students are encouraged to take the exam during the summer prior to coming to the University of Hartford or during their first year. More details about the Praxis I requirement are available from the Department of Education and Human Services.

Praxis I Waiver
The Praxis I waiver may be attained if a student has achieved one of the following: (1) Scholastic Assessment Test (SAT)—administered after April 1, 1995, with a cumulative score of 1100 or better on the combined verbal and mathematics sections of the exam, provided that neither the verbal nor the mathematics subtest score is below 450; or (2) American College Test (ACT)—(a) administered after October 1989, with no less than 22 on the English subtest and 19 on the mathematics subtest, or (b) administered before October 1989, with no less than 20 on the English subtest and 17 on the mathematics subtest; or (3) Prueba de Aptitud Académica (PAA)—with submitted proof of cumulative scores equivalent to those stated for the SAT.

A waiver may be granted by furnishing the Connecticut State Department of Education with official proof of having met one of the test score requirements mentioned above. In addition to forwarding appropriate test scores, you must complete a waiver registration form as a waiver applicant. Waiver application forms are available from the Connecticut State Department of Education website: www.state.ct.us/sde.

Subject Knowledge Assessment: Selected Praxis II Tests for Prospective Teachers
Subject knowledge testing designed by the State Department of Education was instituted in 1988. Students are expected to pass an exit exam or exams in their specialty area as a condition of teacher certification. Students should consult their advisors for details.

Students must successfully complete the appropriate course work and student teaching and pass the required Praxis II specialty or subject area exam(s) prior to being considered certification program completers and before receiving an institutional endorsement for state teacher certification.

As new State of Connecticut certification regulations are implemented, students are required to meet the new standards. While each student works closely with an advisor,
it is the responsibility of the student to make sure that all requirements for certification and graduation are fulfilled.

Foundations of Reading Test
As of July 1, 2009, teacher candidates in Connecticut who are applying for an Integrated Early Childhood endorsement (NK–3) or Elementary Education endorsement (K–6) are required to pass the Connecticut Foundations of Reading Test, a test of reading instruction, knowledge, and skills.

Minors in Teacher Education or Human Services
To complete a minor in teacher education or human services successfully, a student must meet the department’s 2.67 minimum grade point average requirement in education and human services courses, with no grade below a C in the courses applied toward the minor.

Teacher Education Minor
EDF 120 Introduction to Education: Schooling and Human Services
EDH 120 Psychology of Exceptionalities
EDP 230 Educational Psychology
PSY 132 Human Development
PSY 240 Infant and Child Psychology
or PSY 242 Adolescent and Emerging Adult Development
CT 243 Computers in the Classroom

Human Services Minor
EDG 150 Foundations of Human Services
EDG 330 Group Functions in Human Services
EDG 331 Helping Skills and Interpersonal Relationships
EDG 333 People in Systems
EDG 410 Senior Seminar in Human Services
EDG 434 Policy and Practice
Human Services minors may also take
EDG 431Beginning Human Services Internship

Academic Standards
Students must attain a grade of C or better in all required education courses, RPW 110, RPW 111, and in their required general education course(s) in mathematics. Students who receive a grade below C in any of these courses must retake the course. These courses must be taken for a grade only. Pass/No Pass is not acceptable. No more than half of the required All-University Curriculum (AUC) classes may be taken Pass/No Pass. In addition, students may take up to two courses on a Pass/No Pass basis in their chosen subject area or concentration. Students who opt to declare a subject-area major or minor in the College of Arts and Sciences are bound by the specific requirements of their chosen major(s).

Eligibility for student teaching and human services internships is determined on the basis of completion of basic competency requirements, cumulative grade point average, and faculty recommendation. Measures of knowledge, skills, and dispositions will be required at various stages of training. At any time, the department also reserves the right to delay or deny student teaching, internship, and/or continued course work in a planned program, based on professional judgments of a student’s qualifications and competencies.

A cumulative grade point average of 2.67 overall is currently required for admission to the internship or professional program. The stated requirements must be met before admission to the professional program or before human services internship placement will be made. Applications for the professional program, practica, student teaching, and internships are due a full semester prior to assignment. Specific deadlines are posted.

At the completion of teacher preparation programs, the successful completion of Praxis II (as appropriate), the recommendations of the department and the cooperating school systems, the successful completion of the Foundations of Reading Test, and the academic standing of the individual are considered as criteria for a recommendation for certification as a teacher in the state of Connecticut. A grade below C in any student teaching experience automatically precludes a recommendation. At any time, the department reserves the right to deny recommendation for certification based on professional judgments of a student’s qualifications and competencies.

Teacher Preparation Programs
Note: All teacher education programs are designed to lead to State of Connecticut certification. Changes in State of Connecticut certification regulations require adjustments in the degree requirements as they are mandated.

Teacher education programs comprise three groups of course requirements: lower- and upper-level general education courses, professional education courses, and a subject-area major. The upper-level professional education and subject-area major options vary according to the
student’s chosen major. The curricula are outlined under each of the specialized programs that follow.

Field work is required and incorporated into most professional education courses.

**General Education Requirements for Education Majors in Teacher Preparation Programs**

RPW 110 Reading and Writing I [3]
RPW 111 Reading and Writing II [3]
CT 243 Computers in the Classroom [3]
ENG 140 Introduction to Literature [3]
M 116 Contemporary Mathematics [3]
M 118 Introduction to Modern Mathematics (or equivalent) [3]
AUCA Living Responsively to the Arts—AUCA 110, 140, or 150 [3]
AUCC Living in a Cultural Context: Other Cultures—AUCC 110, 120, 150, or 210 [3]
AUCT Living in a Scientific and Technological World—one course (science) [3]
AUCW Living in a Cultural Context: Western Heritage—AUCW 210, 211, 212 [3]
World Language [3]
PSY 101 Introductory Psychology:
  - Concepts [3]
  - or PSY 102 Introductory Psychology:
    - Applications [3]
HE 112 Modern Health Concepts [3]
PE 120 Basics of Human Fitness [1]

**Subject-Area Major Options**

**Required Credits: [39]**

Candidates in early childhood education, elementary education, and the integrated elementary education/special education dual program must choose behavioral studies or any other major offered by the University of Hartford outside of the Education and Human Services department to fulfill the State of Connecticut subject-area major requirement. Secondary education candidates must choose English as their subject-area major.

Students choosing a subject-area major in the College of Arts and Sciences must declare that major, obtain an advisor in the appropriate department, and follow all requirements for that major as set forth in the appropriate sections of this Bulletin. Students who declare a subject-area major in the College of Arts and Sciences must have two advisors—one in the College of Education, Nursing and Health Professions’ Department of Education and Human Services and a second in the appropriate discipline within the College of Arts and Sciences.

**Behavioral Studies Interdisciplinary Major**

**A. Core: Psychology**

**Required Courses (9 credits)**

PSY 101 Introductory Psychology:
  - Concepts [3]
  - or PSY 102 Introductory Psychology:
    - Applications [3]

PSY 240 Infant and Child Development [3]
  - or PSY 242 Adolescent and Emerging Adult Development [3]

**B. Choose three courses (9 credits) from the following:**

PSY 132 Human Development [3]
PSY 222 Principles of Learning, Conditioning, and Behavior [3]
PSY 232 Mental Retardation: Concepts and Theories [3]**

PSY 245 Psychological Aspects of Parenting [3]
PSY 248 Psychology of Gender [3]
PSY 252 Social Psychology [3]
PSY 253 Psychology Applied to the Workplace [3]
PSY 260 Psychology of Adjustment [3]
PSY 261 Stress and Stress Management [3]
PSY 262 Abnormal Psychology [3]
PSY 320 Thinking, Memory, and Problem Solving [3]
PSY 323W Health Psychology [3]
PSY 332 Learning Disabilities: Concepts and Theories [3]*

**C. Students must take one course in each area and a total of seven (21 credits) of the following courses:**

1. **Sociology**

   SOC 110 Introduction to Sociology [3]
   SOC 113 Contemporary Social Issues [3]
   SOC 115 Introduction to Social Welfare [3]
   SOC 130 Cultural Anthropology [3]
   SOC 254 The Sociology of the Family [3]
   SOC 256 The Black Family in American Society [3]
   SOC 258 The Caribbean American Family [3]
   SOC 278 Drugs and Society [3]
   SOC 281 Women in Society [3]
   SOC 288 Death and Dying [3]

   **General education requirements for State of Connecticut teacher certification vary based on the endorsement area. Please see additional requirements listed under the appropriate major.**

   **Required for special education majors and integrated elementary education/special education dual majors.**
SO 320 Social Relations [3]
SO 332 Peoples and Cultures of the Caribbean [3]
SO 336 The American Indian [3]
SO 351 Sociology of Health and Illness [3]
SO 355 Popular Culture [3]
SO 363 Sociology of the City [3]
SO 366 Work and Leisure [3]
SO 382 Race and Ethnic Relations [3]
SO 428 Society and the Individual [3]

2. Politics and Government
POL 100 American Government [3]
POL 110 Power and Politics in America [3]*
POL 210 Urban Politics [3]
POL 220 Comparative Politics [3]
POL 222 Politics of the Third World [3]
POL 230 International Relations [3]
POL 312 Campaigns, Elections, and Voting [3]
POL 313 American Public Policy [3]
POL 330 American Foreign Policy [3]
POL 450 Constitutional Law [3]
POL 451 Civil Rights and Liberties [3]

3. Communication
CMM 110 Introduction to Communication [3]
CMM 222 Small-Group Communication [3]
CMM 225W Interpersonal Communication [3]
CMM 230 Organizational Communication [3]
CMM 325 Family Communication [3]
CMM 335 Ethnic and Intercultural Communication [3]

Early Childhood Education

Bachelor of Science
(124 credits minimum)
The Department of Education and Human Services offers a major in early childhood education for the student who wants to prepare for a career of working in school settings with all children between birth and kindergarten and/or nursery and third grade. The student who selects this major will find that it offers a variety of career possibilities.

The primary objective of this program is to provide a comprehensive core of knowledge relative to working with all types of children (with and without disabilities) within an inclusion model as well as in an inclusion-focused, field-based experience with all types of children in the nursery/kindergarten area. The student then needs to prepare for endorsement in the area of birth to age 5 and/or in nursery through grade 3. This is an appropriate program for students desiring to work with young children in public and private schools as well as childcare centers and other community programs for children. The program is designed for each student to shape a professional identity in the field of early childhood education and to develop the professional skills needed to pursue a career in this field.

The program focuses on the theoretical and practical aspects of the physical, intellectual, language, social/emotional, and creative needs of young children. The integration of services for children, including the needs of the family and collaboration with other professions, is another important focus of the program. Each student participates in a nursery/kindergarten placement, and then, depending on the areas of endorsement selected, participates in another placement in an appropriate setting (birth to age 3 and/or grades 1, 2, and 3).

Professional Education Requirements for Early Childhood Education Majors (51 credits)

In addition to the general education courses previously listed, early childhood majors must complete the following requirements:

Human Growth and Development (15 credits):
PSY 132 Human Development [3]
PSY 240 Infant and Child Development [3]
SOC 254 Sociology of the Family [3]
or approved substitute plus
Two other courses covering typical and atypical development, psychology of learning, and/or family studies [6]
Natural science course [3 or 4]

Professional Education Courses (24 credits, minimum)
EDF 120 Introduction to Education: Schooling and Human Services [3]
EDH 120 Psychology of Exceptionalities [3]
EDP 230 Educational Psychology [3]
EDR 344 Language, Literacy, and Linguistic Diversity [3]
EDY 332 Effective Teaching I: Introduction to Early Childhood [3]
EDY 333 Effective Teaching II [3]
EDY 345 Birth–K Integrated Curriculum [3]
EDY 336 Student Teaching: N–K [3]

Option I: Birth–Kindergarten Endorsement (15 or 18 credits)
EDR 558 Reading and Language Arts through Children’s Books [3]

*POL 110 is a prerequisite for many of the politics courses.
Fieldwork, incorporated into the requirements of most of the professional education courses, is an important component of our commitment to help students learn by putting theory into action. The first field experience begins in a student’s first semester in the elementary education major.

**Professional Education Requirements for Elementary Education Majors (33–36 credits)**

In addition to the general education courses previously listed, elementary education majors must complete the following requirements:

- PSY 240 Infant and Child Development [3]
- Natural science [3 or 4]

**Professional Education Courses**

- EDF 120 Introduction to Education: Schooling and Human Services [3]
- EDH 120 Psychology of Exceptionalities [3]
- EDP 220 Learning and Development [3]
- EDF 220 Diversity [1]
- EDF 222 Gifted and Talented Program [1]
- EDR 344 Language, Literacy, and Linguistic Diversity [3]
- EDR 345 Reading and Language Arts Instruction [3]
- EDR 444 Foundations of Literacy Learning [3]
- EDE 334 Effective Teaching [3]
- EDE 338 The Teacher as Learner [2]
- EDE 339 Math and Instruction Methods [3]
- EDE 441 Teacher as Reflective Practitioner [3]
- EDE 443 Teacher as Instructional Learner [3]
- EDE 444 Student Teaching [9]

**Subject-Area Major**

The subject-area major for elementary education may be satisfied in two ways. The first option is to major in any discipline offered by the University. The second choice is an interdisciplinary major, behavioral studies (see page 254). A cumulative grade point average of 2.67 overall is currently required for admission to the internship or student teaching phase of professional development.

**Electives**

To obtain the total of 124 credits necessary for graduation as an elementary education major, the student will need additional elective credits.
Secondary Education

Bachelor of Arts
(127 credits minimum)

Teaching Fields in Secondary Education
The University of Hartford recommends students for secondary education certification in the English endorsement area. Secondary mathematics education is offered by the College of Arts and Sciences in cooperation with the College of Education, Nursing and Health Professions. Music education is offered by The Hartt School.

Candidates who successfully complete the program in Secondary English Education are eligible, upon recommendation of the University, for Connecticut certification to teach English in grades 7–12.

The Secondary Education program features a full-semester core program of integrated instruction and experience in an urban or suburban public school setting, under the supervision and guidance of clinical professors and a trained cooperating teacher.

Professional Education Requirements for Secondary Education Majors (35 credits)
In addition to the general education courses previously listed, secondary education majors must complete the following requirements:

POL 100 American Government [3]
PSY 242 Adolescent and Emerging Adult Development [3]

Professional Education Courses
EDF 120 Introduction to Education: Schooling and Human Services [3]
EDH 120 Psychology of Exceptionalities [3]
EDP 220 Learning and Development [3]
EDF 220 Diversity [1]
EDF 222 Gifted and Talented [1]

EDR 555 Reading in the Content Areas [3]
EDS 332 Effective Teaching I: The Student in the Secondary Classroom [3]
EDS 333 Effective Teaching II: Secondary Assessment and Methods [3]
EDS 553 Practicum: Secondary English [3]
EDS 554 English Content Methods [3]
EDS 443 The Teacher as Instructional Leader in Education [3]
EDS 444 Student Teaching: Secondary [9]

Subject-Area Major
Only obtaining a major in English can satisfy the subject-area major for secondary English education majors. Students should select this teaching field no later than the end of the first year. The program to be followed is outlined under the teaching major section. Cumulative grade point averages of 2.67 overall and in English are currently required for admission into junior-level professional development courses, as well as for admission into the practica and student teaching phase.

Electives
To obtain the total of 124 credits necessary for graduation as a secondary English education major, the student may need additional elective credits.

Subject-Area Major for Teaching Secondary English Education Fields
Requirements for the English endorsement area are listed below. Please note that, in some cases, one or two of the necessary courses may not be available at the University of Hartford. Students will be assisted in locating equivalent courses at other area schools.

English
Required credits: [36]
Each student should plan his or her program of study in consultation with an English advisor. More detailed information about the B.A. in English is available on page 148.

Students with a literature concentration are required to take
a. ENG 226W Sophomore Seminar in English
b. Two historical surveys of literature, one from each of the following lists:
   1) ENG 220, 222, 230, or 240
   2) ENG 221, 223, 231, or 241

c. One 300- or 400-level course in four of the following five categories:
   1) Ancient and Medieval: ENG 326, 340, 341, 342, 343, or 360
   2) Early Modern: ENG 330, 331, 361, 362, 432, or 433
   3) Long 18th Century: ENG 420, 433, 436, 437, or 438
   4) Long 19th Century: ENG 319, 320, 322, 348, 364, or 365
   5) 20th and 21st Centuries: ENG 305, 322, 329, 347, 349, 366, or 367
d. One drama course: ENG 330, 348, 349, 361, 362, 368, or 420
e. One course in a genre other than drama: ENG 262, 320, 321, 322, 325, 329, 360, 365, 366, 367, 433, or 437
f. One cultural diversity course: ENG 217, 218, 223, 305, 315, 316, 324, 328, or 370
g. ENG 465W Senior Capstone Seminar
h. English electives at the 200 level or above, to reach a total of at least 36 credits (12 courses) to complete the major
Note: A single course may be used to satisfy two—but not three—distribution areas; for example, a course on African American drama might satisfy both the drama requirement and the cultural diversity requirement.

Note: Depending on their content, Studies in..., Special Topics, and honors courses may be used to fulfill distribution requirements. Consult the department chair.

For the purpose of gaining teacher certification, all secondary English education majors must include the following within their major:

ENG 359 Contemporary English Grammar [3]
or ENG 452 History of the English Language [3]
or Linguistics elective [3]

ENG 421 English for the Adolescent Reader [3]

Three credits of Shakespeare:

ENG 361 Shakespeare: Plays to 1600 [3]
or ENG 362 Shakespeare: Plays after 1600 [3]

At least one cultural diversity course
At least one film and one poetry course

Creative writing majors are required to take

a. ENG 225W Introduction to Creative Writing
b. ENG 226W Sophomore Seminar in English
d. Two courses that focus on modern and/or contemporary literature: ENG 217, 218, 223, 321, 322, 325, 329, 347, 349, 366, 367, 421, and, when appropriate, 323, 328, 363, 370
e. ENG 465W Senior Capstone Seminar
f. For the purpose of gaining teacher certification, all secondary English education majors must include the following within their major:

ENG 359 Contemporary English Grammar [3]
or ENG 452 History of the English Language [3]
or Linguistics elective [3]

ENG 421 English for the Adolescent Reader [3]

Three credits of Shakespeare:

ENG 361 Shakespeare: Plays to 1600 [3]
or ENG 362 Shakespeare: Plays after 1600 [3]

At least one cultural diversity course
At least one film and one poetry course

Three credits of electives above the 200 level, if additional credits are required to total 36 credits toward the major.

Secondary English education majors must follow NCTE-suggested course areas, including courses concentrating on the works of women writers and writers of color, as well as courses on film, and poetry.

For course descriptions, see page 150.

Integrated Elementary Education/Special Education Bachelor of Science and Dual Certification Program

(127 credits, minimum)

The program in Integrated Elementary Education and Special Education prepares students to teach children with disabilities and children in general education classrooms. Upon successful completion of course work and specified Praxis II national examinations, students will be recommended for Connecticut teacher certification in special education (comprehensive, grades K–12) and elementary education (grades K–6).

First-year students entering the college beginning in the fall 2010 semester must successfully complete their course work, student teaching, all degree requirements, Praxis II and Connecticut required exams, and apply for special-education certification prior to July 1, 2014.

After this date, the State of Connecticut has proposed significant changes that might eliminate Special Education certification for all undergraduate programs in Connecticut. The proposed changes will, however, include significant special education competencies in the preparation for all other teaching certificates.

As new State of Connecticut certification regulations are implemented, students are required to meet the new standards.

The Elementary Education/Special Education professional preparation program focuses on preparing candidates with an in-depth understanding of disabilities in addition to understanding the developmental, academic, and social needs of all children. Practicum placements are made with children with disabilities as well as in general education classrooms. Knowledge and understanding of the theories and skills of diagnosis, curricular planning and instructional design, and evaluation of student performance are developed through a sequence of course work, seminars, field observation, student teaching, conferences, lectures, practica, and other activities.

Professional Education Requirements for the Integrated Elementary Education/ Special Education Dual Majors Required credits: 126.

In addition to the general education courses previously listed for teacher preparation programs, integrated elementary education/
special education dual majors must complete the following requirements:

Natural science [3 or 4]
PSY 232 Mental Retardation [3]
PSY 240 Infant and Child Development [3]
PSY 332 Learning Disabilities [3]
PSY 333 Emotional Disturbance [3]

**Professional Education Requirements**
(49 credits):
EDF 120 Introduction to Education: Schooling and Human Services [3]
EDF 222 Gifted and Talented [1]
EDH 120 Psychology of Exceptionalities [3]
EDP 220 Learning and Development [3]
EDR 344 Reading and Literature in the Classroom: Language, Literacy, and Linguistic Diversity [3]
EDR 345 Reading and Language Arts Instruction [3]
EDR 444 Foundations of Literacy Learning [3]
EDE 334 Effective Teaching [3]
EDE 338 The Teacher as Learner [2]
EDE 339 Mathematics Instruction and Methods [3]
EDH 420 Teacher as Instructional Leader in Elementary and Special Education [3]
EDH 421 Student Teaching: Elementary and Special Education [9]
EDE 441 The Teacher as Reflective Practitioner [3]
EDH 430 Special Education: Screening and Diagnosis [3]

**Course Descriptions**
The course numbering system is described on page 67.

Special topics courses will be listed in the semester class schedule. Summer offerings will be listed in the Summerterm Bulletin.

**Education, Nursing, and Health Professions**

ENHP 140 Dialogue [1] Dialogue is provided to entering first-year and transfer students to help them develop a thorough awareness of academic and social opportunities at the University. This course incorporates the advising role of the faculty directly into the curriculum as an integral part of the student’s college education.

**Early Childhood Education**

EDY 332 Effective Teaching I: The Student in the Early Childhood Classroom [3] Survey of current programs, their nature and needs, and issues, such as the importance of play and early education of all types of children. Development of teacher behaviors that foster the natural disposition of the young child to grow and learn in the physical, emotional, social, creative, and cognitive areas will be emphasized. A field component will be required. Prerequisite: EDF 120 or EDH 120.

EDY 333 Effective Teaching II: Early Childhood Assessment and Methods [3] A course in the observation/assessment of academic and social skills, lesson and unit planning, effective teaching behaviors, and classroom management for young children with diverse abilities. Strategies to teach concepts, skills, and generalizations at the early childhood level are emphasized. Strategies to adapt the classroom to the needs of special populations will be explored. A field component will be required. Prerequisites: EDF 120 and EDH 120.

EDY 334 Working with Families and Community Services [3] In this course, students will explore the vital role of the family with regard to having a child in an early childhood program. The course details the role of the early childhood teacher as he/she works with both the child and the family. The vast range of community services available to families and children will be covered. Approaches to working toward the implementation of the best possible service delivery for the child and family will be emphasized. Prerequisite: EDY 332.

EDY 336 Student Teaching: Nursery–Kindergarten [3] Provides a supervised on-site experience in a selected inclusion model preschool or kindergarten setting. The student will develop competencies in observing/assessing children and in planning, implementing, adapting, and evaluating instructional programs. Prerequisite: Permission of the department. Laboratory fee.

EDY 345 Early Childhood (Birth–K) Integrated Curriculum [3] This course is designed to explore the components of the early childhood curriculum (language arts, mathematics, science, social studies, expressive arts, health and safety) for birth to kindergarten through the study and creation of a developmentally appropriate and culturally sensitive curriculum for young children. Prerequisites: EDY 332 and EDY 333.
EDY 431 Early Childhood (K–3) Integrated Curriculum [3] This course is designed to focus on the components of early childhood curriculum language arts, mathematics, science, social studies, expressive arts, health and safety for kindergarten to third grade through the study and creation of developmentally appropriate and culturally sensitive curriculum for young children. Prerequisites: EDY 332 and EDY 333.

EDY 432 Infants and Toddlers: Development and Assessment [3] This course will focus on normal and atypical development of infants and toddlers. All areas of development will be included: physical, language, cognitive, and social/emotional. Assessment of development will take into account developmental milestones and developmental lags. Formal and informal assessment tools will be studied. This course will require some observation and direct work with this age group. Prerequisites: EDY 332 and EDY 333.

EDY 433 Student Teaching: Grades 1–3 [3 or 6] Provides a supervised on-site experience in a selected inclusion model setting, grade 1, 2, or 3. The student will develop competencies in observing/assessing children; planning, implementing, adapting, and evaluating materials and instructional programs for children in these grades. Prerequisite: Permission of the department. Laboratory fee.

EDY 434 Student Teaching: Infant/Toddler [3 or 6] Provides a supervised on-site experience in a selected inclusion model, infant and/or toddler, setting. The student will develop competencies in observing/assessing children; planning, implementing, adapting, and evaluating materials and instructional programs for children of this age group. Prerequisite: Permission of the department. Laboratory fee.

EDY 435 Programs and Curriculum for Normal and Special-Needs Infants and Toddlers [3] This course is designed to introduce the student to the most current developmentally appropriate programs and curriculum models for working with normal infants and toddlers and those with special needs. The 10 best practices for working with young children (as specified by the Division of Early Childhood of the Council for Exceptional Children) will be a focal point of the course. Students will visit programs for this age group. Prerequisite: EDY 432.

EDY 439 Professional Internship: Early Childhood Education [3] Provides a classroom experience in directed observation/participation. The student is assigned part time to an early childhood education setting under the direction of the professional staffing the classroom. The student will participate in various aspects of the work of that professional. This is not to be substituted for student teaching in early childhood education. Classroom routines and work with individual children and small groups are emphasized. Prerequisite: Permission of the department.

Elementary Education

EDE 334 Effective Teaching [3] This course is the first in the sequence of three elementary teaching methods courses. It is designed to provide students with an introduction to the broad range of basic elements of effective teaching. The course will involve pedagogy, product, assessment, and evaluation. Students will be introduced to the knowledge base of teaching. Prerequisites: EDH 120, EDF 220, EDF 221, and EDF 222. Co-requisite: EDR 344.

EDE 338 The Teacher as Learner [2] This course introduces the student to the development of teachers as learners. Students will analyze the technical, practical, and critical aspects of teaching through observations of and participation in classroom settings, practices, and interactions. A practical of five hours/week is required. Taken concurrently with EDE 334. Prerequisites: EDH 120, EDF 120, EDP 220, EDF 220, EDF 221, and EDF 222. Laboratory fee.

EDE 339 Mathematics Instruction and Methods [3] This course will provide students with an overview of various methodologies to be used for effective mathematics teaching. Students will construct and select appropriate methods for assessing student, teacher, and curricular effectiveness. In addition, students will be familiar with the National Council of Teachers of Mathematics standards as well as the State of Connecticut’s curriculum standards in mathematics. Prerequisites: EDE 334 and EDE 338. Co-requisites: EDE 341 and EDE 441.

EDE 341 Integrated Methods: Science, Social Studies, and the Arts [3] This course explores the content areas of social studies, science, and the arts. Emphasis is placed on integration of these subject areas within the elementary school curriculum. Students focus on designing and implementing these curriculum areas, instruction, assessment, and evaluation at the elementary school level. Theory, research, and practice of instructional models in these content areas are integrated and applied to the classroom.
Emphasis is placed on the design and implementation of learning activities for the acquisition and assessment of information and skills across the disciplines. The additional focus of the course is on modifying curriculum, instruction, and assessment to address the many areas of diversity represented by students in the elementary classroom. Taken concurrently with EDE 339. Prerequisites: CT 243, EDE 334, and EDE 338.

**EDE 439 Professional Internship: Elementary** [3] Provides a classroom experience in directed observation/participation. The student is assigned part time to an elementary education setting under the direction of the professional staffing the classroom. The student will participate in various aspects of the work of that professional. This is not to be substituted for student teaching in elementary education. Classroom management and tutoring work with children are emphasized. Prerequisite: Permission of the department.

**EDE 441 The Teacher as Reflective Practitioner** [3] This course provides students with an opportunity to analyze and inform their teaching through reflective practice. Students will analyze the knowledge base for teaching, their practical reasoning, and curriculum planning for the classroom. A practicum of 15–20 hours per week is required. Prerequisites: EDE 334 and EDE 338. Corequisites: EDE 341 and EDE 339. Laboratory fee.

**EDE 443 The Teacher as Instructional Leader** [3] This course provides students with an opportunity to analyze and reconstrukt their teaching through reflective practice. The focus of the course will be on the social, ethical, and political context of schooling. This course will meet weekly for three hours. Prerequisites: EDE 334, EDE 338, EDE 339, EDE 341, and EDE 441. Co-requisite: EDE 444.

**EDE 444 Student Teaching—Elementary** [9] This course provides student teachers with an opportunity to integrate their understanding and knowledge of students, content, and pedagogy in an elementary classroom. All placements are approved and require full-day attendance five days per week. Taken concurrently with EDE 443. Prerequisite: EDE 441. Laboratory fee.

**Foundations of Education**

**EDF 120 Introduction to Education: Schooling and Human Services** [3] This course introduces students to the process of education and development as it occurs in schools and social service agencies. It offers a foundation in reflective practice and in the knowledge, skills, and dispositions that are central to these professions. It also focuses on how schools and human service agencies can work together to address issues of concern in the community. The course includes a community-service learning component of two hours weekly.

**EDF 220 Diversity in the Classroom** [1] This course examines the effects of cultural diversity on classroom dynamics. It analyzes the knowledge and skills necessary for working with culturally diverse students while emphasizing the effect of cultures on the classroom. Students will explore cultural influences on their personal development as well as on student development. Students will identify pedagogical and curricular strategies for creating culturally responsive classrooms. Prerequisites: EDF 120 and EDP 220.

**EDF 222 Introduction to Gifted Education** [1] This course will introduce students to the nature and needs of gifted students, major theorists, models, and methods and materials of gifted education. Students will develop curricula and instructional modifications for meeting the needs of gifted students in a variety of settings. Prerequisites: EDF 120 and EDP 220.

**Special Education**

**EDH 120 Psychology of Exceptionalities** [3] An introductory undergraduate course for prospective majors and nonmajors in special education that surveys the various exceptionalities in the population with attention to their etiology, characteristics, contemporary educational practices, and treatment procedures. A fieldwork component is required (see page 258).

**EDH 232/PSY 232 Mental Retardation: Concepts and Theories** [3] The study of the meaning and concepts associated with the field of intellectual disabilities. Includes the historical, social, developmental, theoretical, and educational aspects of intellectual disabilities. Prerequisite: EDH 120 or permission of instructor.

**EDH 244 Sign Language I** [3] Utilization of the American Manual Alphabet, numbers, and approximately 1,000 signs to provide basic expressive and receptive conversational skills in signed English. Selected readings on deafness and manual communication.

**EDH 332/PSY 332 Learning Disabilities: Concepts and Theories** [3] The study of the meaning and concepts associated with the field
of learning disabilities. Includes the divergent characteristics of children with perceptual, motor, and conceptual impairment. Prerequisite: EDH 120 or permission of instructor.

EDH 333/PSY 333 Emotional Disturbances: Concepts and Theories [3] The study of the major theoretical constructs associated with the socially/emotionally maladjusted. Includes characteristics, treatment approaches, and classroom applications. Prerequisite: EDH 120 or permission of instructor.

EDH 420 The Teacher as Instructional Leader in Elementary/Special Education [3] This course develops competencies in (1) writing individualized education programs, (2) modifying and adapting curriculum and instruction for students with special needs, (3) managing behavior of students with significant behavioral challenges, and (4) collaboration and consultation with teachers and specialists. Prerequisite: EDE 334. Taken concurrently with EDH 421.

EDH 421 Student Teaching: Elementary/Special Education [9] This course provides student teachers with an opportunity to integrate and to apply their understanding and knowledge of students, content, and pedagogy. Student teachers will teach in an elementary classroom, with an equal amount of time spent teaching students with disabilities. All placements are approved and require full-day attendance five days a week. Prerequisite: EDE 334. Taken concurrently with EDH 420. Laboratory fee.

EDH 430 Special Education: Screening and Diagnosis [3] Development of competencies in the screening and diagnosis of pupils experiencing difficulty in school; administering, scoring, and interpreting data from formal and informal assessment materials; development of competencies to devise individual programs based on the pupil’s unique learning characteristics. Prerequisites: EDR 344, PSY/EDH 232, PSY/EDH 332, and PSY/EDH 333.

EDH 439 Professional Internship: Special Education [3] Provides a classroom experience in directed observation/participation. The student is assigned part time to a special education setting under the direction of the professional staffing the classroom. The student will participate in various aspects of the work of that professional. This is not to be substituted for student teaching in special education. Classroom management and tutoring are emphasized. Prerequisite: Permission of the advisor.

Health Education


Psychology and Human Development

EDP 132/PSY 132 Human Development [3] Theories and research in human development from infancy through adulthood. Students will carry out structured observations and integrate these observations with various theoretical issues. Prerequisite: EDF 120 or permission of department.

EDP 220 Learning and Development: Understanding Yourself and Others [3] This course examines major milestones in cognitive and social development from infancy through adolescence, as well as the diversity of learning needs and styles. Preservice teachers will also develop a better understanding of their current position and style as learners and of the developmental processes that brought them this far. The preservice teachers will be able to demonstrate understanding of basic concepts and the ability to apply them. Prerequisite: PSY 101 or 102, or permission of instructor.

EDP 230 Educational Psychology [3] Study of human behavior in learning situations. Topics include development and learning, individual differences, conditions for learning, and dynamics of achieving learning outcomes. Special emphasis on working with individuals in a variety of settings.

EDP 510 Emotional Intelligence and Executive Function Strategies [3] This course provides proactive strategies for training others in executive functioning (self-management) and emotional intelligence (self-awareness and relationship management). Educators, counselors, and human service professionals learn strategies to assist their students or clients and themselves in building lifelong skills.
Language Literacy

EDR 335 Language and Literacy Development for All Learners [2] This course introduces the developing teacher to reading instruction and the development of a reading/writing community. Students learn the latest research about literacy development and its relationship to classroom instruction for all learners. Approaches to teaching low-English-proficient and at-risk students are integrated throughout the course.

EDR 344 Language, Literacy, and Linguistic Diversity [3] This course is designed to introduce the developing teacher to reading instruction and the development of a reading/writing community. Students will learn the importance of encouraging language development while engaging children in the reading process. This course is designed to help education majors develop a set of clear principles and strategies for literacy instruction. Students will learn ways to implement a balanced approach to reading instruction that implements semantic, syntactic, and graphophonic sources of information; a print-rich environment with interesting, authentic reading materials at the appropriate instructional level; and the latest research about literacy development and its relationship to classroom instruction for all learners. Approaches to teaching low English-proficient and at-risk students will be integrated throughout the course. Emphasis will be placed on involving families in literacy development and using appropriate children’s literature to motivate and engage young beginning readers. Corequisite: Fieldwork.

EDR 345 Reading and Language Arts Instruction [3] This is a second reading course for students seeking elementary teacher certification. This course will explore assessment and instructional techniques in reading and language arts instruction. The student will develop skills in helping learners to construct meaning, apply strategies, analyze, elaborate, and respond critically when reading; and to write so as to communicate a message in a coherent, elaborated fashion through the use of the writing process. Students will learn how to use literature to teach and reinforce skill acquisition. Attention will be paid to techniques and materials appropriate for teaching low English-proficient and at-risk students. State and national reading guidelines will be used to develop an appropriate reading and language arts program. Prerequisite: EDR 344. Corequisite: Fieldwork.

EDR 444 Foundations of Literacy Learning [3] This course addresses beginning reading content and builds upon a foundation for reading instructional practices. Learning outcomes pertaining to phonemic awareness, phonics knowledge, reading comprehension, and assessing reading are emphasized. The sequencing of reading curricula and integration of reading instruction, including response to intervention, within the elementary curriculum is a focus for instruction. Students are required to apply their knowledge of the reading processes and instructional and assessment practices to their fieldwork within the course assignments. Prerequisite: EDR 344.

EDR 555 Reading in the Content Areas [3] This course is designed to prepare secondary education students with the knowledge and skills to teach and reinforce reading, writing, listening, and speaking skills and concepts in secondary classrooms. This course focuses on pedagogical strategies that address the developmental needs of students. Emphasis is given to reflection as part of the teaching/learning process. Prerequisites: EDS 332 and one foundations course. Corequisite: Fieldwork.

EDR 558 Reading and Language Arts through Children's Literature [3] This course is the second literacy learning course for early childhood majors. It focuses on effective, research-based ways of helping and supporting young children to develop as readers, writers, speakers, listeners, and thinkers. Students will learn how to develop and teach in a comprehensive literacy learning program that encourages thoughtful, critical, and extensive reading and writing. Students will explore children’s literature in order to foster lifelong literacy in young children. Prerequisite: EDR 344 or EDR 550.

Secondary Education

EDS 332 Effective Teaching I: The Student in the Secondary Classroom [3] Survey of current programs, nature and needs, and issues relating to secondary education. Overview of current classroom practices in secondary schools, with particular attention paid to the needs of adolescents in educational settings. A fieldwork component is required (see page 258). Prerequisite: EDF 120 or EDH 120.

EDS 333 Effective Teaching II: Secondary Assessment and Methods [3] A course in assessment of academic and social skills, lesson and unit planning, effective teaching behaviors, and classroom management. Strategies to teach concepts, skills, generalizations, and values
in content areas at the secondary level are emphasized. A fieldwork component is required (see page 256). Prerequisite: Junior standing in ENHP or permission of department.

EDS 443 The Teacher as Instructional Leader in Education [3] This course provides students with an opportunity to analyze and reconstruct their teaching through reflective practice. The focus of the course will be on social, ethical, and political contexts of schooling relating to secondary education. This course will meet weekly for three hours. Prerequisites: EDS 332, EDS 333, and EDS 554. Corequisite: EDS 444.

EDS 444 Student Teaching—Secondary [9] This course provides the student teacher with the opportunity to integrate his/her understanding and knowledge of students, content, and pedagogy in a secondary classroom. All placements are approved and require full-day attendance five days per week. Taken concurrently with EDS 443. Prerequisites: EDS 332 and EDS 333. Laboratory fee.

EDS 553 Practicum [3] Provides classroom experience in directed observation/participation. The student is assigned a half day practicum experience at a high school or middle school setting under the direction of the professional staffing in the classroom. The student will participate in various aspects of the work of that professional. Classroom management and work with middle/high school students are emphasized. This is not a substitute for student teaching in secondary English education. Candidates will also meet once a week for a seminar on their practicum experience. Corequisite: EDS 554.

EDS 554 Methods for Secondary English [3] The development of instructional skills for teaching English at the secondary level. In addition to strategies for teaching language, literature, and literacy (reading, writing, speaking, and listening), the course will focus on the development of pedagogical strategies that address the developmental needs of students. Emphasis is given to reflection as part of the teaching/learning process. Practicum experience in a local high school is a corequisite for this course.

Special Topics

M 118 Introduction to Modern Mathematics I [3] Sets, operations on sets, historical background for numeration, system of natural numbers, number bases, systems of integers, rational numbers, metric geometry, modular systems, groups, fields, rings, integral domains, relations, and functions. A two-hour laboratory per week is included.

CT 243 Computers in the Classroom [3] This course introduces undergraduate education majors to the uses of microcomputers in educational settings. Focus will be on (1) the evaluation of educational software; (2) the integration of educational software and utility packages, such as word processors and databases, into the K–12 curriculum; and (3) the use of special computer-based research materials, such as Logowriter and LEGO Logo. Laboratory fee.

EDX 143-144 Independent Study [1–3] Special project assignments arranged with and approved by a faculty advisor.

PE 120 Basics of Human Fitness [1] A study of human fundamental movements and how they can be integrated into the development of a physical-fitness or physical-education program. The programs are divided into three basic areas: rhythmics, self-testing activities, and low-organization activities. Each area includes lead-up games to higher-skilled sports.

Human Services

EDG 150 Foundations in Human Services [3] This introductory course presents the core framework for working with people in human services. It integrates necessary concepts and skills, including human-service delivery systems, human development, human system theory, diversity, self-understanding, and strategies for problem solving. Prerequisite: EDF 120.

EDG 310 Residential Education and the College Student [2] This course focuses on student development theory, leadership skills, and topical problems facing college students in relation to the residential college experience.

EDG 330 Group Functions in Human Services [3] Students learn the fundamentals of group dynamics, development, and leadership by participating in a semester-long group experience led by the professor. Readings and structured reflections augment the classroom experience. Applications to a variety of human service settings are discussed. Prerequisite: EDF 120.

EDG 331 Helping Skills and Interpersonal Relations [3] Basic human services skills, including listening and interviewing, decision making, and problem-solving strategies, will be presented, discussed, demonstrated, and practiced.
EDG 333 People in Systems [3] Students will learn to apply an integrated model for problem solving and analysis that combines individual and systemic perspectives. Problems will be selected by students and the instructor and will be viewed through the lenses of developmental theory, family systems theory, social justice theory, and organizational theory. Prerequisite: EDF 120.

EDG 410 Senior Seminar in Human Services [3] This course is designed to help senior human services majors identify and address areas in the human services field in which they desire further study. Students will participate with the instructor in determining course content. Topics will be presented by the student and the instructor.

EDG 431 Beginning Human Services Internship [3] A field placement in a human services setting. Students will be required to spend a minimum of 115 hours in an approved, supervised setting, with specific duties and experiences detailed in a contract between the university, the site supervisor, and the student. Students are also required to attend a biweekly seminar to organize the experience and explore and discuss issues of common interest. Prerequisites: Written application and permission of instructor.

EDG 432 Advanced Human Services Internship [6] An advanced field placement in a human services setting. Students will be required to spend a minimum of 225 hours in an approved, supervised setting, with specific duties and experiences detailed in a contract between the university, the site supervisor, and the student. Students are also required to attend a biweekly seminar to organize the experience and explore and discuss issues of common interest. Prerequisites: Written application and permission of instructor.

EDG 434 Human Services Policy and Practice [3] This course provides human service interns with practical information and skills to deal effectively with present policies and concerns as influenced by national, federal, community, and individual resources and constraints. Prerequisites: EDF 120, EDG 150, EDG 333; to be taken concurrently with EDG 431 or 432.
Department of Nursing

Bachelor of Science in Nursing

Department of Nursing Faculty
Associate Professors Breda, Diehl (Department Chair)
Assistant Professors Buonocore, Lewis

The Bachelor of Science in Nursing (B.S.N.) degree program is an upper-level program designed for the practicing nurse who already holds the RN license. Graduates of the B.S.N. program are prepared for advancement in professional nursing as well as graduate study in nursing.

The B.S.N. curriculum focuses on transforming the student’s perspective from passive to active learner, acute care to community focus, medical to nursing model, disease to health promotion orientation, job to career, and individualism to a community of scholarly caring.

Advisement
An advisor is available to meet with prospective students to explain the program and to do a preliminary evaluation of prior course work completed by the student. Upon matriculation, students are assigned to a faculty advisor who meets with each student every semester to monitor progress and to assist the student in course selection.

Facilities
A comprehensive collection of nursing journals and books as well as audiovisual equipment are housed in the Mortensen Library. There are five computer laboratories on campus, supplied with a variety of personal computers, printers, and software. The Beatrice Fox Auerbach Hall houses the offices for the Department of Nursing.

Accreditation and Memberships
The Bachelor of Science in Nursing program is accredited by the State of Connecticut Board of Governors for Higher Education and by the Commission on Collegiate Nursing (CCNE). CCNE maintains program information on tuition, fees, and length of program. Contact CCNE at One Dupont Circle, NW, Suite 530, Washington, DC 20036-1120; 202.887.6791.

The Department of Nursing belongs to the following organizations: American Association of Colleges of Nursing (AACN), National League for Nursing (NLN), and Connecticut League for Nursing (CLN).

Financial Aid
Prospective students should check with the personnel office of their employer to find out if tuition reimbursement is a benefit to which they are entitled. Many institutions provide full or partial reimbursement for course work that leads to a degree. Nursing students who carry a minimum of 6 credits per semester are eligible to apply for the low-interest Stafford Loan. Forms are available in the Student Financial Assistance office.

Admission
Each applicant must submit the following:
- evidence of RN licensure in the United States
- official transcripts from nursing school and any colleges attended
- evidence of a minimum of a C average in lower-division nursing courses

Nurses who have graduated from foreign schools of nursing must obtain RN licensure in the state of Connecticut. To be eligible to sit for the state licensing exam, a graduate of a foreign nursing program must first pass a two-part exam given by the Commission on Graduates of Foreign Nursing Schools (CGFNS, 3600 Market St., Suite 400, Philadelphia, PA 19104-2651, U.S.A.; telephone: 215.349.8767, fax: 215.662.0425).

Advanced Placement
Registered nurses interested in the B.S.N. program are encouraged to contact the Department of Nursing and request a preliminary evaluation of their academic work as part of an informational interview. Under the terms of the Connecticut Articulation Agreement (2002), licensed registered nurses who are accepted into the University of Hartford’s B.S.N. program will receive a minimum of 60 credits toward their degree.

Academic Standards
A grade of C or better is required in each nursing course.
Degree Requirements
A minimum of 120 credits is required to earn the B.S.N.

Nursing Courses
30 credits in nursing courses, including:

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUR 333 Professional Nursing Concepts</td>
<td>3</td>
</tr>
<tr>
<td>NUR 334 Seminar in Nursing Research</td>
<td>3</td>
</tr>
<tr>
<td>NUR 340 Health Assessment</td>
<td>3</td>
</tr>
<tr>
<td>NUR 343 Nursing and Diversity</td>
<td>3</td>
</tr>
<tr>
<td>NUR 432 Proactive Nursing</td>
<td>3</td>
</tr>
<tr>
<td>NUR 433 Community Health Nursing</td>
<td>3</td>
</tr>
<tr>
<td>NUR 434 Community Service Learning I</td>
<td>3</td>
</tr>
<tr>
<td>NUR 443 Nursing Synthesis Seminar</td>
<td>3</td>
</tr>
<tr>
<td>NUR 444 Community Service Learning II</td>
<td>3</td>
</tr>
<tr>
<td>Nursing elective course</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total credits</strong></td>
<td><strong>30</strong></td>
</tr>
</tbody>
</table>

Prerequisites for nursing courses
Students holding the associate degree in nursing (A.D.N.), have a minimum GPA of 2.70, and who show proof of RN licensure will receive (upon review of transcripts by the University of Hartford) 60 transfer credits. The Dual Admission Agreement with the Connecticut Community College Nursing Programs assures admission to all A.D.N. graduates from Connecticut Community Colleges who meet the requirements.

Block of Transfer Credits from
A.D.N. program: 60
M 114 Elementary Statistics: 3

General Education Requirements

I. Humanities and Arts
6
Students may choose courses from these categories: Art, Cinema, Drama, English, History, Languages, Music, Other Cultures, Philosophy, Ethics, Religion, Theatre, Literature, and Communication.
(This includes the UH courses labeled: AUCA, AUCC, AUCS, AUCW.)

II. Social Sciences
6
Students may choose courses from these categories: Anthropology, Economics, Politics and Government, Sociology, and Psychology.

III. Electives
15
(Courses chosen in consultation with academic advisor.)

Course Descriptions

NUR 333 Professional Nursing Concepts
This course initiates the process of perspective transformation that registered nurses typically experience during baccalaureate education that broadens the view of themselves, of nursing, and of the possibilities of their own practice. During this course students are introduced to the basic principles, knowledge base, and new skills they need to be successful in the program. These principles and skills are embedded in the RN-B.S.N. program. Prerequisite: Matriculation into nursing major.

NUR 334 Seminar in Nursing Research
This course introduces the research process as used in the social sciences. Students critique quantitative and qualitative research reports from nursing and related disciplines. Emphasis is on evaluating research for applicability to nursing practice, understanding integrated research reviews, and supporting evidence-based nursing practice. Prerequisites (or concurrent): NUR 333 and M 114.

NUR 340 Health Assessment
This course focuses on developing a sound database regarding the health of individual systems for use in planning nursing interventions. Application of assessment skills and interviewing techniques with individual systems from birth through old age are stressed. Three hours of campus laboratory time are required. Prerequisite: NUR 310.

NUR 343 Nursing and Diversity
This course introduces population-focused nursing through the study of healthy families, support groups, and diverse sociocultural groups. Emphasis is placed on diversity as it relates to nursing practice. Students apply theoretical concepts from family, group, and cultural studies to real-life situations. Co-/prerequisite: NUR 333.

NUR 432 Proactive Nursing
This course involves a critical examination of the interaction of the nursing profession, society, and the healthcare delivery system. Theories related to leadership, management, policy, and change are discussed, and proactive strategies are explored. Prerequisite: NUR 333.

NUR 433 Community Health Nursing
The course explores the relationship of nursing and community and public health practice. Emphasis is on assessment of the community as the client system and on community needs assessment. Major community and public health problems and issues are analyzed. Co-/prerequisite: NUR 343.

NUR 434 Community Service Learning I
This course involves students in community service learning theory and practice. Through Project Horizon, the University of Hartford’s community outreach program, students partner with nonprofit agencies and programs serving
primarily vulnerable populations. Engagement, reflection, reciprocity, and public dissemination are the vehicles through which service learning is implemented. This course is designed to enhance students’ understanding of the social determinants of illness, community public health nursing, and civic engagement. Co-/prerequisite: NUR 433.

**NUR 443 Nursing Synthesis Seminar** [3] This seminar course helps students synthesize selected nursing concepts and apply them to professional, autonomous nursing practice. Ethical and political economic principles that guide and influence nursing practice and global and local healthcare systems are analyzed. Co-/prerequisites: NUR 432 and NUR 433.

**NUR 444 Community Service Learning II** [3] Through Project Horizon, the University of Hartford’s community outreach program, students partner with nonprofit agencies and programs serving primarily vulnerable populations. Engagement, reflection, reciprocity, and public dissemination are the vehicles through which service learning is implemented. Students use participatory action research methods to foster wellness, quality of life, and civic engagement. Co-/prerequisites: NUR 434 and NUR 443.

**Nursing Elective Courses**

**NUR 410 Environment and Health** [3] This course focuses on the impact of the environment and health on ourselves, our families, our patients, and our communities. Course content includes identifying environmental toxins, their consequences on our health and our future, and safer alternatives. This course also specifically addresses legislation, governmental policies, current research, and environmental health assessment of individuals and communities.

**NUR 445/645 Emergency and Disaster Preparedness** [3] This course provides an overview of emergency and disaster preparedness. Beginning with definitions and scope of natural disasters, pandemics, and terrorism, students consider homeland security, planning and operations, roles of citizens and the professions, barriers to preparedness, legal considerations, psychological responses, and ethical issues. Using group facilitation and case study method, the course prepares students for a leadership role to advance community emergency preparedness, volunteer management, and community recovery activities. Information provides the foundation for personal and professional emergency-preparedness planning and action. Prerequisite: Undergraduate or graduate standing in nursing and health professions; other students by permission of instructor.

**NUR 470 Contemporary Topics in Nursing** [1–4] Study of a selected topic, issue, or area related to nursing. Since the subject of this course will vary from semester to semester, it may be elected for credit more than once with permission of the division.

**NUR 480 Independent Study** [1–4] Planned jointly by student and nursing faculty members, an individualized project designed to give students opportunities to develop and pursue their own special interest in nursing.

**NUR 492, 493, 494, 495 Special Topics in Nursing** [1–4] Selected topics in nursing and nursing-related areas, varying from year to year in accordance with the needs of the curriculum and the students.

**NUR 510 Healthcare Informatics** [3] This course introduces healthcare professionals to the study of healthcare informatics. Federal, state, and private initiatives are demanding the development and use of electronic health-record systems and other technology to improve the quality, safety, and evidence base of care. It is critical that healthcare professionals in all roles and at all levels keep pace with the latest advances in informatics. This course provides students with practical knowledge and skills, exposure to emerging technologies, and opportunities for providing optimal healthcare services in today’s high-technology environments—important even when that technology has not yet been fully implemented. Prerequisite: Students should have basic computer literacy skills or permission of instructor.
Department of Health Sciences

The Department of Health Sciences comprises the following academic programs: Clinical Laboratory Science/Medical Technology, Radiologic Technology/Diagnostic Imaging, Respiratory Care, and Health Science. The department offers programs for traditional and nontraditional students seeking professional certificates or Bachelor of Science degrees. All programs provide state-of-the-art professional preparation that includes course work in the natural and social sciences, liberal arts, and general education. Graduates are prepared to meet the intellectual, social, cultural, and economic challenges of our changing healthcare system.

Within the Health Science program, pre-professional tracks are pre-chiropractic, pre-optometry, pre-osteopathic medicine, pre-pharmacy, and pre-podiatry. Each program adheres to the University’s Manual of Academic Policies and Procedures, and each professional program has a student handbook that details academic policies specific to that program.

Advising

The Department of Health Sciences has established a first-year and transfer student curriculum to assist new students in adjusting to academic and campus life and to begin to examine issues related to the healthcare professions. Students meet regularly in small classes with a faculty advisor during the fall and spring semesters to discuss educational goals, curricular and extracurricular options, and career opportunities and healthcare issues. The relationship developed between faculty and student helps to ensure the student’s academic success at the University.

Premedical Professions

Premedical professions students participate in the University’s Premedical Advising program, which begins in the second semester of the first year. This special program assists students in achieving their professional goals by offering a structured advising program that provides the solid foundation needed for further study in the medical professions.

Transfer Students

Transfer student programs are designed individually, with consideration given to academic history and to the specific program into which a student is transferring. Due to stringent state and national licensure requirements for the various programs within the College of Education, Nursing and Health Professions, cumulative grade point average requirements demand that transfer students plan their programs carefully and that they keep in close contact with their academic advisors. Transfer student admission policies vary from program to program; however, all transfer students must have attained a minimum GPA of 2.5 to be eligible for transfer into the Clinical Laboratory Science, Radiography, and Respiratory Care programs, and a GPA of 2.33 to be able to transfer into the Health Sciences program.

Facilities

The on-campus facilities of the Department of Health Sciences are located in Charles A. Dana Hall and the new Integrated Science, Engineering, and Technology complex. Features of the building include a simulated clinical laboratory, an energized imaging laboratory for radiography, classrooms, the Hoffman Clinical Skills Teaching Laboratories, and a combined laboratory/classroom for radiologic technology and respiratory care. Dana Hall also houses faculty offices and individual research laboratories for graduate student and faculty use.

Off-Campus Clinical Facilities

Saint Francis Hospital and Medical Center (Hartford, Conn.) is affiliated with the department’s Clinical Laboratory Science/Medical Technology program.

Connecticut Children’s Medical Center, Connecticut Orthopedics and Sports Medicine, Connecticut Valley Radiology, Grove Hill Medical Center, Hartford Hospital, Jefferson Radiology, Manchester Memorial Hospital, New Britain General Hospital, Open MRI of Connecticut, Rockville General Hospital, and Saint Francis Hospital and Medical Center serve as clinical affiliates for the Radiologic Technology program.

Connecticut Children’s Medical Center, John Dempsey Health Care Center, Hartford Hospital, Hospital for Special Care, Hospital of Central Connecticut, and Professional Homecare Services are the clinical affiliates for the Respiratory Care program.

The Health Science program has articulation agreements with five professional doctoral degree programs: the New England College of Optometry, located in Boston’s Back Bay area; New York Chiropractic College, located in Seneca Falls, N.Y.; New York College of Podiatric Medicine, located on Park Avenue in New York City; University of New England College of
Osteopathic Medicine, located on the Maine coast in Biddeford; College of Notre Dame of Maryland School of Pharmacy; and Ross University School of Medicine.

Accreditation
Refer to page 11 for the department’s accreditation memberships and addresses.

Upon completion of the clinical requirements of the department’s programs, students are eligible to sit for professional certification, registration, and/or state licensure examinations.

Admission Requirements
For admission into the Department of Health Sciences, 16 units of secondary subjects are expected, among which the following are strongly recommended:

<table>
<thead>
<tr>
<th>Subject</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>4</td>
</tr>
<tr>
<td>Social studies</td>
<td>2</td>
</tr>
<tr>
<td>Foreign language</td>
<td>2</td>
</tr>
<tr>
<td>Mathematics (including one unit of algebra and trigonometry)</td>
<td>3</td>
</tr>
<tr>
<td>Science</td>
<td>2</td>
</tr>
<tr>
<td>Other academic subjects</td>
<td>3</td>
</tr>
</tbody>
</table>

Applicants for the Bachelor of Science degree programs must have three years of college preparatory mathematics, including trigonometry.

General Education Requirements for the A.S. Degree
Students in the Associate in Science degree program for healthcare professionals are required to fulfill the general education requirements described below:

I. Basic Requirements

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RPW 110 Reading and Writing I</td>
<td>3</td>
</tr>
<tr>
<td>M 110 Modeling with Elementary Functions</td>
<td>3</td>
</tr>
<tr>
<td>HS 140, 141 Introduction to the Health Professions I, II [2, 2]</td>
<td>4</td>
</tr>
</tbody>
</table>

II. Humanities and Arts

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUCW Western Heritage</td>
<td>3</td>
</tr>
<tr>
<td>AUCC Other Cultures</td>
<td>3</td>
</tr>
<tr>
<td>AUCA Living Responsibly to the Arts</td>
<td>3</td>
</tr>
</tbody>
</table>

Any two courses from

- Communication, cinema, drama, English, history, philosophy, modern languages and cultures, art history, music theory

Total credits 6–8

III. Social Sciences

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUCS Social Context</td>
<td>3</td>
</tr>
</tbody>
</table>

Total credits 9

Total general education credits 40–43

General Education Requirements for the B.S. Degrees
Students in the Bachelor of Science degree programs are required to fulfill the general education requirements described below:

I. Basic Requirements

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RPW 110, 111 Reading and Writing I, II</td>
<td>6</td>
</tr>
<tr>
<td>HS 140, 141 Introduction to the Health Professions I, II [2, 2]</td>
<td>4</td>
</tr>
</tbody>
</table>

One of the following (program specific):

- M 110 Modeling with Elementary Functions
- or M 140 Pre-calculus with Trigonometry
- or M 144 Calculus I

Total credits 3–4

II. Humanities and Arts

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUCW Western Heritage</td>
<td>3</td>
</tr>
<tr>
<td>AUCC Other Cultures</td>
<td>3</td>
</tr>
<tr>
<td>AUCA Living Responsibly to the Arts</td>
<td>3</td>
</tr>
</tbody>
</table>

Any two courses from

Communication, cinema, drama, English, history, philosophy, modern languages and cultures, art history, music theory

Total credits 6–8

III. Social Sciences

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUCS Social Context</td>
<td>3</td>
</tr>
</tbody>
</table>

Total credits 9

Total general education credits 40–43

General Education Requirements for Transfer Students

I. Basic Requirements

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RPW 110, 111 Reading and Writing I, II</td>
<td>6</td>
</tr>
</tbody>
</table>

One of the following (program specific):

- M 110 Modeling with Elementary Functions
- or M 140 Pre-calculus with Trigonometry
- or M 144 Calculus I
- ENHP 140 Dialogue
- HS 111 Healthcare Concepts

Total credits 3

Total general education credits 16–17
II. Humanities and Arts  Credits
Any five courses from
Cinema, communication, drama, English,
history, philosophy, modern languages
and cultures, art history, music theory,
theatre, AUCW, AUCC, or AUCA  15

III. Social Sciences
Any three courses from
Economics, politics and government,
psychology, sociology, or AUCS  9

IV. All-University Curriculum (AUC)
Students transferring in fewer than 24 credits
are required to take four AUC courses, each
from a different AUC category. Students trans-
ferring in 24 to 53 credits are required to take
two AUC courses. The categories are deter-
mined on an individual basis by the student’s
advisor. AUC courses are not required of stu-
dents who transfer in more than 53 credits to the
college.
Total general education credits  41

Academic Standards
Specific program standards are outlined in each
professional program’s student handbook. Stu-
dents must attain a grade of C or better in RPW
110 and RPW 111 or their equivalents. These
courses must be taken for a letter grade and may
not be taken on a Pass/No Pass basis.

Professional Phase of Study
Health sciences students take courses in various
colleges at the University of Hartford during
their undergraduate experience. The profes-
sonal component of each program includes courses
offered by the College of Education, Nursing
and Health Professions that are required for the
major. The courses are also reviewed by external
accrediting agencies. In respiratory care and ra-
diologic technology, students typically begin
their professional study during their sophomore
year. The senior year is the professional/clinical
year for clinical laboratory science/medical
technology.

Students of our programs may be required to
undergo criminal background checks and/or
drug screening prior to placement at an affiliate
partner. The results of the background check or
drug screen may result in the denial of eligi-
bility for a student to participate in fieldwork at
one or more of our affiliates. This may also lim-
it the ability of a student to graduate from the
applicable degree program. Please refer to the
specific program for additional information.

Additional Requirements
Transportation to and from clinical sites and
living expenses are the responsibility of the stu-
dent. Students in the health sciences are re-
quired to purchase malpractice insurance before
beginning their clinical placements. Students
may also be required to purchase their own uni-
forms and/or lab coats to meet the requirements
of a clinical site. It is strongly recommended
that students, with the advice of their personal
physicians, obtain Hepatitis B and all other im-
uminations prior to entering the clinical com-
ponent of their program. Students in the Clinical
Laboratory Science, Radiologic Technology,
and Respiratory Care programs must provide
evidence of medical insurance coverage at least
equal to the coverage provided by the Univer-
sity’s student healthcare insurance policy.

Continuance into Professional
Course Work
When health professions students are admitted
directly into their major, the letter of acceptance
indicates the year that the student will enter the
professional phase of the program. Students are
guaranteed placement in the professional pro-
gram for the date indicated in their acceptance
letter and need not reapply to the program as
long as and only if they (1) maintain contin-
uous full-time status and (2) maintain the speci-
fied overall GPA and science GPA required for
their program of study. Students who do not
meet the above criteria forfeit their guaranteed
placement.

In addition to the previously stated criteria,
students applying for admission to the Clinical
Laboratory Science/Medical Technology Clini-
cal program must participate in formal inter-
views with clinical affiliates prior to final ma-
ticulation into the program.

Enrollment in Courses
at Other Institutions
Health sciences students may enroll in courses
at other institutions in accordance with Uni-
versity policy. The appropriate form must be
signed by the program director. Grades attained
in approved science courses will be included in
the calculation of the science grade point aver-
age, although they will not be reflected in the
official university grade point average. Science
courses taken by transfer students at other
institutions are also included in the science
grade point average calculation. Students en-
rolled in the Health Science preprofessional
programs may not take science courses at another institution.

**Honors Program**
Qualified students in the Department of Health Sciences are eligible to participate in the University Scholars program and in honors courses offered by the department, in the All-University Curriculum, and in the College of Arts and Sciences.

**Certificate Programs in the Health Sciences**

**Certificate Program in Clinical Laboratory Science**
The 12-month clinical year in clinical laboratory science may be completed by students who currently hold a bachelor’s degree and have completed clinical-program entrance requirements. This program prepares students for a career in clinical laboratory sciences. Categorical concentrations in the areas of immunohematology, hematology, chemistry, and microbiology are also available for post-baccalaureate degree students. See page 280 for additional details.

**Certificate Program in Radiologic Technology**
*This certificate program is open only to students who have been formally admitted into the radiologic technology major.*
The certificate program in radiologic technology prepares individuals for careers in the field of diagnostic imaging. This accredited program accepts qualified individuals into a 21-month sequence that provides students with both classroom instruction and clinical experience. Individuals are required to have completed course work in anatomy and physiology, chemistry, mathematics, and physics in order to be eligible for admission. Classes begin in the fall and are held continuously for 21 months, leading to completion of the program in the spring.

Upon completion of this competency-based program, graduates are eligible to sit for the national credentialing examination. For additional information on this program, please contact the Department of Health Sciences.

**Certificate Program in Magnetic Resonance Imaging**
The certificate program in magnetic resonance imaging (MRI) prepares individuals for a career in an exciting field of diagnostic imaging. The program accepts qualified individuals into a 10-month, 21-credit sequence of courses that provides students with both classroom instruction and clinical experience. Applicants are required to be CPR certified, ARRT certified in radiography, nuclear medicine, or sonography, and licensed in the state of Connecticut. Classes begin in the fall, with completion of classroom instruction the following spring. Completion of clinical requirements may extend beyond the spring semester and is determined by requirements set by individual student progress.

Upon completion of both classroom instruction and clinical requirements, the graduate is eligible to sit for the national credentialing examination in MRI. For additional information on this program, please contact the Department of Health Sciences.

**Certificate Program in Computed Tomography**
The certificate program in computed tomography (CT) prepares individuals for a career in an exciting field of diagnostic imaging. The program accepts qualified individuals into a yearlong, 14-credit sequence of courses that provides students with both classroom instruction and clinical experience. Individuals are required to be CPR certified, ARRT certified, and licensed in the state of Connecticut as radiologic technologists. Classes begin in the fall, with completion of classroom instruction the following spring. Completion of clinical requirements may extend beyond the spring semester and is determined by requirements set by individual student progress.

Upon completion of both classroom instruction and clinical requirements, graduates are eligible to sit for the national credentialing examination in computed tomography. For additional information on this program, please contact the Department of Health Sciences.

**Certificate Program in Respiratory Care**
*This certificate program is open only to students who have completed a bachelor’s degree.*
The certificate program in respiratory care prepares the individual for a career as a respiratory therapist. Therapists are actively involved in the treatment of individuals suffering from cardiopulmonary diseases and injury. This accredited program accepts qualified individuals into a two-and-one-half-year sequence of courses that provides students with both classroom instruction and clinical experience. Individuals are required to have completed course work in anatomy and physiology, chemistry, mathematics, and physics in order to be eligible for admission. Classes begin in the fall.
Completion of the program qualifies the graduate to sit for the national credentialing examination. For additional information on this program, please contact the Department of Health Sciences.

**Graduate Courses**

Seniors in good academic standing are eligible to take selected graduate courses in the College of Education, Nursing and Health Professions and the College of Arts and Sciences with the permission of their advisor and the course instructor.

**Health Science**

*Professor* Dix

*Assistant Professors* Buffo, Demaio (Director of Radiography), Kennedy (Department Chair), Oakes (Program Coordinator), Richard (Director of Clinical Education, Radiologic Technology)

**Undergraduate Major Program**

**A.S. Degree (68 credits)**

The Associate in Science curriculum for healthcare professionals consists of liberal arts education in the humanities and social sciences. Additional course work in the sciences is required to complete the program of study.

Healthcare professionals who have completed hospital-based allied health programs at accredited institutions may be granted 30 or more credits toward the degree requirements. Study may be pursued on either a full- or part-time basis. Students are expected to fulfill the University’s residency requirement by completing at least the final 30 credits at the University.

**Requirements for the Major**

- BIO 212, 213 Anatomy and Physiology I, II (or equivalent)
- Chemistry (one course with lab)
- Physics (one course with lab) (see below)

Healthcare professionals who have completed a two-year, hospital-based, allied health program may have up to two of the above courses waived, depending on the curriculum of the clinical program.

**General Education Requirements**

In addition to the Health Science program requirements, students must fulfill the general education requirements for the Associate in Science of the Department of Health Sciences (see page 270).

**Undergraduate Major Program**

**B.S. Degree (120 credits minimum)**

The Health Science program is a Bachelor of Science curriculum that may be pursued on a full-time or part-time basis. Individuals may enter the program as first-year or transfer students. The premedical professions program of study prepares students for professional graduate study in health-related fields, such as physician assistant, pre-pharmacy, occupational or speech therapy, or dentistry. The program may also be pursued as a Bachelor of Science completion degree for healthcare professionals who have attained clinical competency through hospital-based or community college health professions programs.

The upper-level program is open to all certified allied health personnel and to registered nurses (associate or diploma). The degree may qualify these individuals for professional advancement, graduate study, or for advanced certification.

The flexible curriculum allows students the opportunity to study, in addition to the science core courses, advanced areas of science and medicine or to develop skills in managerial operations, educational techniques, computer science technology, or communication.

**Admission Requirements**

Upper-level program applicants should hold the appropriate professional certification or license, and their academic records should include formal clinical study from an accredited program. (Pre-professional and physical therapy applicants refer to specific admission information.)

Applicants who have completed formal programs of study in allied health or nursing, and hold the appropriate professional certification or license, may be granted up to 60 credits toward the lower-division degree requirements. Thirty credits may be awarded for a one-year, hospital-based, allied health program. Additional credit may be obtained through the University’s LINCS (Learning in Noncredit Settings) program.

**Requirements for the Major**

*Fifteen science core courses, including*

- BIO 122, 123 Biological Science I, II
- BIO 212, 213 Anatomy and Physiology I, II (or equivalent)
- BIO 272W-273W Genetics and Genetics Laboratory
- BIO 337W, 338 Immunology and Immunology Laboratory
  *or* BIO 352 Cell Biology
BIO 440 Medical Microbiology
or BIO 442 Microbiology
CH 114, 136 Principles of Chemistry I, II
or CH 110, 111 College Chemistry
Physics (one 4-credit course or equivalent)
16–20 credits in advanced science/health science electives
6–8 credits of health sciences professional course work

Additional science courses may be considered, depending on interest and prior academic achievement.

Courses required for the major may not be taken on a Pass/No Pass basis. Students are required to maintain a 2.33 overall grade point average.

Students are required to complete an approved concentration (an additional 12 credits in a subject major), or they may elect to complete an approved minor.

General Education Requirements
In addition to the Health Science program requirements, students must fulfill the general education requirements of the Department of Health Sciences and the college (see page 270).

Undergraduate Preprofessional Programs for Health Science Majors

B.S. Degree (120 credits minimum)

Combined Bachelor of Science/doctoral programs at the University of Hartford, in association with several collegiate medical professional institutions, provide a unique opportunity for students with career goals in the areas of chiropractic, optometry, osteopathic medicine, and podiatry. The programs allow for the completion of the Bachelor of Science and a doctorate within a seven-year (or less) period. Initial study at the University of Hartford allows the student to complete the general education and basic science requirements for the health sciences degree, and the prerequisites necessary for professional study. The B.S. degree is awarded by the University of Hartford following the successful completion of the first year of graduate study.

The Doctor of Chiropractic program requires three and one-third years of combined academic and clinical training leading to the D.C. degree, which is a prerequisite for licensure eligibility in the United States. The New York Chiropractic College, located in Seneca Falls, N.Y., provides students with an accredited, three-and-one-third-year, professional chiropractic curriculum.

The New York Chiropractic College is accredited by the Middle States Association of Colleges and Schools (Commission on Higher Education of the Middle States Association of Colleges and Schools) and the Commission on Accreditation of the Council of Chiropractic Education.

Admission Requirements

The combined program is for the academically outstanding student with a strong, realistic motivation toward the chiropractic profession. Applicants must excel academically and may be interviewed by representatives from both institutions. Students admitted into the program are expected to maintain a 3.25 overall grade point average during their matriculation at the University of Hartford, with a minimum grade of C.
in all required courses. Final admission to the New York Chiropractic College is contingent upon successful completion of required program course work, the recommendation of the health science program director, and completion of a satisfactory interview with NYCC admissions officials.

**Requirements for the Major**

Prior to attendance at the New York Chiropractic College, students are required to complete all of the general education requirements for the Bachelor of Science in Health Science and the following science/math requirements:

29 credits in biology:
- BIO 122, 123 Biological Science I, II [4, 4]
- BIO 212, 213 Anatomy and Physiology I, II [4, 4]
- BIO 272W-273W Genetics and Genetics Laboratory [3, 1]
- BIO 352 Cell Biology [4]
- BIO 440 Medical Microbiology [4]
  or BIO 442 Microbiology [4]
- BIO 444-445 Biochemistry and Biochemistry Laboratory [3-2]

16 credits in chemistry:
- CH 110-111 College Chemistry I, II [4-4]
- CH 230-231 Organic Chemistry I, II [4-4]
- 15–19 credits in mathematics/physics:
  - M 114 Everyday Statistics [3]
  - M 140 Pre-calculus with Trigonometry [4]
  and/or M 144 Calculus I [4]
- PHY 120, 121 Algebra-Based Physics I, II [4, 4]

**Pre-Optometry**

*Professor Oakes (New England College of Optometry)*

A combined Bachelor of Science/Doctor of Optometry (B.S./O.D.) program between the University of Hartford and the New England College of Optometry (NECO) provides a rare opportunity for students with career goals in optometry. The accelerated program typically allows for the completion of the B.S./O.D. degrees in a seven-year period. The B.S./O.D. program is for the academically outstanding student with a strong motivation toward the optometric profession. Initial study at the University of Hartford allows the student to complete the general education and basic science requirements for the health sciences degree, and the prerequisites necessary for professional study. The B.S. degree is awarded by the University of Hartford following the successful completion of the first year of graduate study.

The Doctor of Optometry program requires four years of combined academic and clinical training leading to the O.D., which is a prerequisite for licensure eligibility in the United States. The New England College of Optometry, located in Boston, provides students with an accredited, four-year, professional optometry curriculum.

The New England College of Optometry is accredited by the New England Association of Schools and Colleges, Inc. (NEASC) and the Accreditation Council on Optometric Education (ACOE) of the American Optometric Association (a member of the Council of Post-Secondary Accreditation).

**Admission Requirements**

The combined program is for the academically outstanding student with a strong, realistic motivation toward the optometric profession. Applicants must excel academically and may be interviewed by representatives from both institutions. Up to five students are accepted annually by the New England College of Optometry. Students admitted into the program are expected to maintain a 3.4 overall minimum grade point average during their matriculation at the University of Hartford, with a minimum grade of C in all required courses. Final admission to the New England College of Optometry is contingent upon successful completion of required program course work, satisfactory Optometry Admission Test (OAT) scores, the recommendation of the University of Hartford’s Pre-medical Professions Advisory Committee, and completion of a satisfactory interview with NECO admissions officials.

**Requirements for the Major**

Prior to attendance at the New England College of Optometry, students are required to complete all of the general education requirements for the Bachelor of Science in Health Science and the science/math requirements.

29 credits in biology:
- BIO 122, 123 Biological Science I, II [4, 4]
- BIO 212, 213 Anatomy and Physiology I, II [4, 4]
- BIO 272W-273W Genetics and Genetics Laboratory [3-1]
- BIO 352 Cell Biology [4]
- BIO 440 Medical Microbiology [4]
  or BIO 442 Microbiology [4]
BIO 444-445 Biochemistry and Biochemistry Laboratory [3-2]

{16 credits in chemistry:}
CH 110, 111 College Chemistry I, II [4, 4]
CH 230, 231 Organic Chemistry I, II [4, 4]

15–19 credits in mathematics/physics:
M 114 Everyday Statistics [3]
M 140 Pre-calculus with Trigonometry [4]
and/or M 144 Calculus I [4]
PHY 120, 121 Algebra-Based Physics I, II [4, 4]

{Pre-Osteopathic Medicine}

Professor Dix
Assistant Professors Kennedy (Department Chair), Oakes (Program Coordinator)
Clinical Professor Buser (University of New England College of Osteopathic Medicine)

A combined Bachelor of Science/Doctor of Osteopathic Medicine (B.S./D.O.) program between the University of Hartford and the University of New England College of Osteopathic Medicine (UNECOM) provides an opportunity for students with career goals in medicine. The program typically allows for the completion of the B.S./D.O. degree in a seven-year period. The B.S./D.O. program is for the academically outstanding student with a strong motivation toward the profession of osteopathic medicine.

Initial study at the University of Hartford allows students to complete the general education and basic science requirements for the health sciences degree. The B.S. degree is awarded by the University of Hartford following the successful completion of the first year of graduate study.

The Doctor of Osteopathic Medicine program requires four years of combined academic and clinical training leading to the D.O. degree, which is a prerequisite for licensure eligibility in the United States. Following graduation from UNECOM, students complete a 12-month residency and may also choose to complete an additional program in a specialty area. The University of New England College of Osteopathic Medicine, located in Biddeford, Maine, provides students with an accredited, four-year, professional medical curriculum.

The University of New England College of Osteopathic Medicine is accredited by the American Osteopathic Association Commission on Osteopathic College Accreditation (AOA COCA). The University of New England is accredited by the New England Association of Schools and Colleges (NEASC).

{Admission Requirements}
The combined program is for the academically outstanding student with a strong, realistic motivation toward the medical profession. Applicants must excel academically and may be interviewed by representatives from both institutions. Students admitted into the program are expected to maintain a minimum of 3.0 overall grade point average during matriculation at the University of Hartford, with a minimum grade of C in all required courses. (The University of Hartford’s course-repeat policy does not apply to the calculation of the cumulative grade point average.) Final admission to the University of New England College of Osteopathic Medicine is contingent on successful completion of program course work, satisfactory Medical College Admission Test (MCAT) scores, the recommendation of the University of Hartford’s Premedical Professions Advisory Committee, and completion of a satisfactory interview with UNECOM admissions officials.

{Requirements for the Major}
Prior to attending the University of New England College of Osteopathic Medicine, students are required to complete all of the general education requirements for the Bachelor of Science in Health Science and the science/math requirements:

{29 credits in biology:}
BIO 122, 123 Biological Science I, II [4, 4]
BIO 212, 213 Anatomy and Physiology I, II [4, 4]
BIO 272W-273W Genetics and Genetics Laboratory [3-1]
BIO 352 Cell Biology [4]
BIO 440 Medical Microbiology [4]
or BIO 442 Microbiology [4]
BIO 444-445 Biochemistry and Biochemistry Laboratory [3-2]

{16 credits in chemistry:}
CH 110, 111 College Chemistry I, II [4, 4]
H 230, 231 Organic Chemistry I, II [4, 4]

{15–19 credits in mathematics/physics:}
M 114 Everyday Statistics [3]
M 140 Precalculus with Trigonometry [4]
and/or M 144 Calculus I [4]
PHY 120, 121 Algebra-Based Physics I, II [4, 4]

{7 credits in mathematics}
M 144 Calculus [4]
M 114 Everyday Statistics [3]

In addition, the following humanities and social science elective is required:

PSY 101 Introduction
Pre-Pharmacy

Professor Dix
Assistant Professors Kennedy (Department Chair), Oakes (Program Coordinator)
Clinical Professor Linn (College of Notre Dame of Maryland School of Pharmacy)

A combined Bachelor of Science/Doctor of Pharmacy (B.S./Pharm.D.) program between the University of Hartford and the College of Notre Dame of Maryland School of Pharmacy provides an opportunity for students with career goals in pharmacy. The program typically allows for the completion of the B.S./Pharm.D. degree in a seven-year period. The B.S./Pharm.D. program is for the academically outstanding student with a strong motivation toward the field of pharmacy.

Initial study at the University of Hartford allows students to complete the general education and basic science requirements for the health sciences degree. The B.S. degree is awarded by the University following the successful completion of the first year of graduate study.

The Doctor of Pharmacy program requires four years of combined academic and clinical training leading to the Pharm.D. degree, which is a prerequisite for licensure in the United States.

The College of Notre Dame of Maryland School of Pharmacy is located in Baltimore, Md. The Doctor of Pharmacy program of the College of Notre Dame of Maryland School of Pharmacy was awarded candidate accreditation status during the June 23–27, 2010, meeting of the ACPE board of directors based upon a site evaluation conducted April 27–29, 2010. If the program continues to develop as planned, full accreditation of the Doctor of Pharmacy program will be considered by the board following the graduation of students from the program. For more information about its accreditation status, please see the website at ndm.edu/admissions/schoolofpharmacy.

Admission Requirements

The combined program is for the academically outstanding student with a strong, realistic motivation toward a career in pharmacy. Applicants must excel academically and may be interviewed by representatives from both institutions. Students admitted into the program are required to maintain a 3.25 overall grade point average (GPA) and a 3.25 science GPA during their matriculation at the University of Hartford, with a minimum grade of C in all required program course work, satisfactory scores on the Pharmacy College Admission Test (PCAT), the recommendation of the Health Science program coordinator, and completion of a satisfactory interview with CND-SOP Admissions officials.

Requirements for the Major

Prior to attendance at the CND-SOP students are required to complete all of the general education requirements for the Bachelor of Science in Health Science and the science/math requirements.

28 credits in biology:
BIO 122, 123 Biological Science I, II [4, 4]
BIO 212, 213 Anatomy and Physiology I, II [4, 4]
BIO 272W-273W Genetics and Genetics Laboratory [3-1]
BIO 352 Cell Biology [4]

16 credits in chemistry:
CH 110, 111 College Chemistry I, II [4, 4]
CH 230, 231 Organic Chemistry I, II [4, 4]

8 credits in physics:
PHY 120, 121 Algebra-Based Physics I, II [4, 4]

7 credits in mathematics:
M 144 Calculus [4]
M 114 Everyday Statistics [3]

In addition, the following humanities and social science electives are required:

PSY 101 Introduction to Psychology:
Concepts [3]

PHI 232 Biomedical Ethics [3]

EC 101 Introduction to Economics [3]

Pre-Podiatry

Assistant Professors Kennedy (Department Chair), Oakes (Program Coordinator)
Clinical Professor Trepal (New York College of Podiatric Medicine)

A combined Bachelor of Science/Doctor of Podiatric Medicine (B.S./D.P.M.) program between the University of Hartford and the New York College of Podiatric Medicine (NYCPM) provides a rare opportunity for students with career goals in podiatry. The accelerated program typically allows for the completion of the B.S./D.P.M. degrees in a seven-year period. The B.S. degree is awarded by the University of Hartford following the successful completion of the first year of graduate study.

Initial study at the University of Hartford allows students to complete the general education requirements of the College of Education, Nursing and Health Professions, the basic science
courses required for the health sciences degree, and the prerequisites necessary for professional study. The B.S./D.P.M. program is for the academically outstanding student with a strong motivation toward the profession of podiatric medicine.

The Doctor of Podiatric Medicine program requires four years of combined academic and clinical training leading to the D.P.M., which is a prerequisite for licensure eligibility in the United States. The New York College of Podiatric Medicine, located in New York City, provides students with an accredited, four-year, professional podiatric curriculum.

The New York College of Podiatric Medicine is accredited by the Council on Podiatric Medical Education of the American Podiatric Medical Association. The council’s evaluation/accreditation procedures, as well as the educational standards and requirements it has set, have been reviewed and accepted by the Commission on Recognition of Postsecondary Accreditation and the United States Department of Education. The Podiatric Medicine program is registered by the New York State Education Department as meeting the professional education requirement for licensure in New York State as set forth in New York State Education Law, the Rules of the New York State Board of Regents, and the Regulations of the New York State Commissioner of Education. The board of regents is a nationally recognized accrediting agency by the United States Department of Education.

Admission Requirements

The combined program is for the academically outstanding student with a strong, realistic motivation toward the podiatry profession. Applicants must excel academically and may be interviewed by representatives from both institutions. Students admitted into the program are expected to maintain a minimum of 3.0 overall grade point average during matriculation at the University of Hartford, with a minimum grade of C in all required courses. Final admission to the New York College of Podiatric Medicine is contingent upon successful completion of program course work, satisfactory Medical College Admission Test (MCAT) scores, the recommendation of the University of Hartford’s Premedical Professions Advisory Committee, and completion of a satisfactory interview with NYCPM admissions officials.

Requirements for the Major

Prior to attending the New York College of Podiatric Medicine, students are required to complete all of the general education requirements for the Bachelor of Science in Health Science and the science/math requirements.

29 credits in biology:

- BIO 122, 123 Biological Science I, II [4, 4]
- BIO 212, 213 Anatomy and Physiology I, II [4, 4]
- BIO 272W-273W Genetics and Genetics Laboratory [3-1]
- BIO 352 Cell Biology [4]
- BIO 444-445 Biochemistry and Biochemistry Laboratory [3-2]

16 credits in chemistry:

- CH 110-111 College Chemistry I, II [4-4]
- CH 230-231 Organic Chemistry I, II [4-4]

15–19 credits in mathematics/physics:

- M 114 Everyday Statistics [3]
- M 140 Precalculus with Trigonometry [4] and/or M 144 Calculus I [4]
- PHY 120, 121 Algebra-Based Physics I, II [4, 4]

Course Descriptions

HS 100, 200, 300, 400, 530 Cooperative Education Program [all 1–3] A work-learn program that combines the practical experience of employment in a healthcare setting with the academics of the University. This course is offered in conjunction with a number of clinical affiliates. Graded on a Pass/No Pass basis. Prerequisites: Sophomore standing and 2.5 GPA.

HS 111 Healthcare Concepts [3] A general overview of the healthcare system in today’s society. Working in teams, students investigate current healthcare issues and must demonstrate competency in oral and written communication and use of the library. Topics include healthcare systems, healthcare reform, medical ethics, universal precautions, AIDS, alternative medicine, and the roles and responsibilities of allied health professionals. Prerequisite: permission of instructor.

HS 140 Introduction to Healthcare Professions I [2] An introductory course for all first-year students in the Department of Health Sciences. This course addresses issues of being a new college student as well as a student within the health professions. Topics related to healthcare are covered within the framework of
providing students with skills essential for success as a college student (research, group work, in-class presentations, writing assignments, and class discussions). This fall semester is linked with a spring-semester course that continues with topics related to professionalism, patient care, and healthcare system.

**HS 141 Introduction to Healthcare Professions II** [2] This is the second semester of a two-semester course sequence addressing issues related to healthcare professions. Topics include the U.S. healthcare system, HIPAA, complementary and alternative medicine, patient/co-worker diversity, standard procedures, palliative care, emergency preparedness, and professionalism. Prerequisite: HS 140 or permission of instructor.

**HS 190, 290, 390 Special Topics** [all 1–4] Lectures, laboratories, or workshops in various areas of health or biomedical science.

**HS 191, 291, 391, 491 Special Topics** [all 1–4] Lectures on special topics in healthcare to increase the depth and breadth of understanding of the healthcare field for both healthcare majors and non-healthcare majors.

**HS 315 Human Nutrition** [3] This course presents concepts of human nutrition and diet, providing a foundation for the understanding of how good nutrition is essential for proper physiological functioning of the human body. Issues related to the normal digestive process, essential dietary requirements, and effects of deficiencies are discussed. Prerequisites: CH 110-111, or CH 114 and CH 136; and BIO 212 and 213.

**HS 335 Physiological Chemistry** [3] A systematic study of the chemical basis for human physiology. Topics include nutrition, digestion, metabolism, endocrinology, growth, reproduction, and the function of major structures, including heart, lung, kidney, liver, muscle, and brain. Prerequisites: BIO 212 and 213, or equivalent.

**HS 350 Introduction to Gerontology** [3] An introductory class presenting the fundamentals of aging, including normal physiologic processes, lifestyle modifications, geriatric healthcare issues, social-support systems, and issues of geriatric care facing healthcare practitioners. Prerequisites: HS 140 and 141, or HS 111, or faculty permission.

**HS 390 Introduction to Health-Promotion Programs** [3] This course presents the fundamentals of health-promotion programming. Students learn about the health-promotion program process, including needs assessment, development, implementation, and evaluation. The course explains health-promotion programming in the context of the changing healthcare system. Examples of successful health-promotion programs are described and analyzed throughout the course. Prerequisite: Junior status.

**HS 350 Introduction to Geriatric Care** [3] An introductory class presenting the fundamentals of aging, including normal physiologic processes, lifestyle modifications, geriatric healthcare issues, social-support systems, and issues of geriatric care facing healthcare practitioners. Prerequisites: Junior or senior standing, or faculty permission.

**HS 450 Hyperbaric Medicine** [3] A course dealing with the use of hyperbaric conditions in the treatment of various disease conditions; hyperbaric medicine theory. Indications for use, application, and potential hazards are the focus of the course. This course is relevant to a variety of healthcare providers. Prerequisites: CH 110 and CH 111, or CH 114 and CH 136.

**HS 470 Pharmacology** [3] A survey of pharmacology, including the description of the action, use, and toxicity of the major classes of drugs, and the nature of and therapy for the major diseases that are responsive to drug therapy. Classes of drugs include hormones, barbiturates, opiates, amphetamines, diuretics, anesthetics, and antibiotics. Diseases include cancer, heart disease, infection, schizophrenia, and arthritis. Prerequisites: CH 114, or CH 110 and CH 111.

**HS 475 Genomics: A Critical Perspective** [3] The Helsinki Accord of 1962 expanded upon earlier documents ensuring that all subjects of human investigation would be informed of risks, and freely consent to those risks, before being subject to any experimental protocol. But genetic engineering is an experimental protocol and, on the scale currently in vogue, it subjects us all to unquantifiable risks without our consent. This course investigates these risks and weighs them objectively against imagined benefits. It encourages students to reclaim their right to give informed consent before being subjected to these risks. Prerequisite: Junior standing or higher as a biology, chemistry, or health science major.
HS 480, 481, 482, 483 Independent Study [all 1–4] Individual work in the field of health sciences under faculty supervision. Prerequisites: Permission of instructor and signature of division chairperson on the basis of a written prospectus submitted in advance.

HS 490, 491, 492, 493 Special Topics in Health Science [all 1–4] Lectures, laboratories, or workshops in various areas of health or biomedical science.

HS 508 Educational Strategies for the Health Professions [1–3] A modular, variable-credit course designed to introduce students to the principles of community, peer, professional, or patient education. The course addresses issues of educational psychology, goal and objective writing, learning styles, presentation skills, needs assessment, and educational outcome assessment. Prerequisite: Junior status or higher.

HS 509 Healthcare Administration and Management [1–3] A modular, variable-credit course designed to introduce students to the principles of management in healthcare services. The course provides an overview of the principles of healthcare management from fiscal, personnel, and administrative perspectives. The impact of a changing healthcare system on reimbursement, program cost-effectiveness, outcome management, human resources, and ethical decision making is addressed. Students gain experience in program development by designing programs and systems to evaluate program effectiveness. Prerequisite: Junior status or higher.

HS 511 Basics of Healthcare Research [2] Introduction to the research process to understand evidence based practice and research questions of importance to healthcare practitioners. The course is designed to provide an introduction to the basic elements of research design and statistical analysis through reading of relevant literature and critical discussion. Students will learn to be conscientious consumers of healthcare related research. Prerequisite: Junior status or higher.

HS 512 Healthcare Research Seminar [1] Students become active participants in the research process with the instructor. This course provides students the opportunity to further explore the research process as it relates to the historical models that are the subject of HS 511. Prerequisite: HS 511.

Clinical Laboratory Science

Professor Dix
Assistant Professor Kennedy (Department Chair)
Program Director Ciarcia
Clinical Coordinator Cafro
Clinical Professor Barrows (Medical Director)
Clinical Assistant Professors Cessario,
DiMichele, Flaherty, Riordan, Testerman,
Vaccarelli, Varcas, Zaleski
Clinical Instructors Anderson, Bernadini,
Chieffo, Caruk, Masthay, Nabors, Simone,
Turgeon

Undergraduate Major Program (130.5 credits)

Accepting transfer students only.

Not open to freshmen.

The Clinical Laboratory Science (CLS) program is closing in May 2014. The University is no longer accepting freshmen. However, transfer students will be considered as well as those who would like to pursue the CLS certificate as long as they would be able to complete the program by May 2014. Questions regarding transferring into the CLS program or pursuing a certificate may be addressed to
Margaret Ciarcia, M.A., MT(ASCP)BB
Program Director
Clinical Laboratory Science Program
Department of Health Sciences
University of Hartford
200 Bloomfield Ave.
West Hartford, CT 06117
Telephone: 860.768.4573
E-mail: ciarcia@hartford.edu

The program in clinical laboratory science leads to a Bachelor of Science and a certificate in clinical laboratory medicine. The curriculum provides the student with both the theory and laboratory skills required for career entry and to prepare the student to take a position of responsibility in the clinical laboratory.

The program of study comprises courses in the sciences, social sciences, and humanities, followed by a 12-month clinical or professional year. This fourth year is autonomous and may be completed by students wishing to receive a certificate in clinical laboratory science who currently hold a bachelor’s degree that reflects completion of required course work. Certificates for categorical concentrations in the areas of immunohematology, hematology, chemistry, and microbiology are also available for post—
baccalaureate degree students. Instruction is University based and uses an on-campus, simulated clinical laboratory as well as the facilities of the hospital affiliate. Saint Francis Hospital and Medical Center and the University of Hartford combine resources to improve the quality of instruction and the diversity of experience.

The 12-month clinical year includes intensive experience at the affiliate hospital, as well as courses in clinical chemistry, body-fluid and urine analysis, immunology, hematology, clinical microbiology, and immunohematology. Successful completion of this clinical component qualifies the student to take the Medical Laboratory Scientist certification examination given by the American Society for Clinical Pathology Board of Certification National Credentialing Agency for Laboratory Personnel. The program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences, 8410 West Bryn Mawr Avenue, Suite 670, Chicago, IL 60631; 773.714.8880. Students intending to participate in the clinical year should contact the program director or clinical coordinator in their sophomore year.

**Note:** The University of Hartford’s Clinical Laboratory Science Program is closing in May 2014. Freshmen will no longer be accepted into the program, but transfer students or certificate students who can complete the program by May 2014 will still be considered for admission.

### Requirements for the Major

Prior to clinical year admission, students are required to complete at least 90 credits that include completion of all distribution requirements for the Bachelor of Science and the following science program.

**27 credits in biology/health science:**

BIO 122 Biological Science I [4]
BIO 212, 213 Anatomy and Physiology I, II [4, 4]
BIO 272W-273W Genetics and Genetics Laboratory [3-1]
BIO 337W Immunology [3]
BIO 338 Immunology Laboratory [1]
BIO 440 Medical Microbiology [4]
or BIO 442 Microbiology [4]
HS 335 Physiological Chemistry [3]

**17 credits in chemistry:**

CH 110-111 College Chemistry [4-4]
CH 226 Quantitative Analysis [5]
CH 136 Principles of Chemistry II [4]

(CH 230-231 Organic Chemistry is recommended for students interested in future graduate study.)

**7 credits in mathematics:**

M 114 Everyday Statistics [3]
M 140 Precalculus with Trigonometry [4]

**3 credits in computer science:**

CS 110 Introduction to Computers [3]

Eight credits in physics are recommended for students interested in future graduate study.

PHY 120, 121 Algebra-Based Physics I, II [4, 4]

### Clinical-Year Admission

All students—those matriculated in clinical laboratory science/medical technology at the University of Hartford, those enrolled in medical technology programs at other institutions, and college graduates—need to apply specifically for admission to clinical study. Candidates for clinical-year admission must submit the following:

1. Transcripts from all postsecondary institutions attended
2. Completed program application
3. Three recommendations/references using the forms provided
4. Completed acknowledgment form that includes
   b. Academic and Technical Standards
   c. Health Insurance Portability and Accountability Act of 1996
   d. Drug Screen and Felony Conviction Statement

Two interviews, including one at Saint Francis Hospital and Medical Center, are also required of each candidate.

In addition, biology, chemistry, and mathematics courses must be completed with a grade point average of 2.5 or higher; and a minimum of 2.7 is required.

Clinical Year: 40.5 credits in Clinical Laboratory Science/Medical Technology, including HS 508, HS 509, HS 511, MT 430, MT 431, MT 435, MT 440, MT 442, MT 443, MT 444, MT 445, MT 446, MT 447, MT 448, MT 449, MT 450, MT 451, MT 452, MT 453, MT 454, and MT 455.

Each of the courses in the MT clinical year must be completed with a grade of C or higher.

Students should refer to the *Pre–Clinical Laboratory Science* and *Clinical Student* handbooks for additional specific academic and program requirements.
Writing Requirement
Clinical laboratory science majors are required to fulfill a writing requirement by preparing scholarly abstracts, critiques, laboratory reports, and scientific papers.

Course Descriptions

MT 360 Medical Technology—Honors Section [3] An introduction to principles and procedures inherent in the medical laboratory setting. Independent research in a field of special interest is performed under faculty supervision. Prerequisite: Permission of instructor.

MT 430 Clinical Microbiology I [4] A study of the fundamental procedures and principles employed in the clinical microbiology laboratory. Topics include infectious hazards, sterilization techniques, media preparation, staining reactions, colony morphology, biochemical characteristics of common pathogens, introduction to plate reading and antibiotic testing. Prerequisite: Permission of instructor. Laboratory fee.

MT 431 Clinical Microbiology II [2] Advanced theories, trends, and procedures applied in the clinical microbiology laboratory. Topics include clinically significant mycology, parasitology, virology, biochemical and instrumental identification of microorganisms, problem solving, and quality control systems. Prerequisites: MT 430, 440, and 442; or permission of instructor.

MT 435 Body Fluids and Urinalysis [1.5] A study of renal physiology and routine urinalysis, including sediment examination and chemical testing. Physiology, analysis, specimen collection and handling, and the correlation of test results are studied for various body fluids. Prerequisite: Permission of instructor. Laboratory fee.

MT 440 Medical Technology Orientation [1] Lectures to familiarize students with hospital orientation and organizations, professional ethics, legal aspects of medicine, the healthcare team, the role of the technologist (past, present, and future trends), medical terminology, laboratory safety, quality control, and blood collection techniques. Prerequisite: Permission of instructor. Laboratory fee.

MT 442 Clinical Immunology [3] A study of basic immunology, rapidly leading to lecture and laboratory exercises in basic serology. Topics include syphilis serology, infectious mononucleosis, rheumatoid arthritis testing, C-reactive protein, pregnancy testing, and quality control. Prerequisite: Permission of instructor. Laboratory fee.

MT 443 Clinical Chemistry I [4] Procedures and principles of basic biochemical determinations performed in the clinical chemistry laboratory are presented. Topics include carbohydrate, electrolyte, acid base balance, enzyme, protein, and blood urea determinations. Prerequisite: Permission of instructor. Laboratory fee.

MT 444 Clinical Chemistry II [1] An intense study in special topics in clinical chemistry oriented toward clinical correlation of basic chemistry analysis to pathophysiology. Topics are metabolic disorders, toxicology, esoteric procedures, endocrinology, quality control systems, evaluation and troubleshooting of instruments, and procedures and problem solving. Prerequisites: MT 440 and 443, or permission of instructor.

MT 445 Hematology I [4] A study of the basic theory and laboratory exercises employed in the clinical hematology laboratory. Topics include hemopoiesis, hemostasis, cytochemistry, and hemoglobin metabolism. The student is expected to become proficient in the basic methods and principles of determining hemoglobin, hematocrits, sedimentation rates, cell counting, prothrombin times, and normal blood cell differentiation. Prerequisite: Permission of instructor. Laboratory fee.

MT 446 Hematology II [1] An in-depth study of procedures and theory utilized in the investigation of anemias, leukemias, hemoglobinopathies, coagulation disorders. Other topics include the unique problems of data handling, quality control, and problem solving in the hematology laboratory. Prerequisites: MT 440, 442, and 445; or permission of instructor.

MT 447 Immunohematology I [3] A study of human blood group antigens and antibodies and their immunologic reactions, followed by basic instruction in blood banking. Topics include hemolytic disease of the newborn, ABO and Rh systems, compatibility testing, the antiglobulin test, antibody identification, and daily quality control. Prerequisite: Permission of instructor. Laboratory fee.

MT 448 Immunohematology II [2] Advanced blood banking theory focused on the problems encountered in the hospital transfusion service. Topics include rare blood group antigens and antibodies, donor selection, component prepa-
ration and storage, blood needs in emergency situations, transfusion reaction procedures, histocompatibility, autoimmune hemolytic anemia, polyagglutination, and problem solving in the transfusion service. Prerequisites: MT 442, MT 447, and permission of instructor.

MT 449 A Case Study Approach to Medical Technology [1] The correlation of pathological disorders with medically relevant laboratory data is presented through the use of patient case studies.

**Clinical Affiliate Practica**

Actual experience in various clinical laboratories integrated with advanced courses. Topics include quality control systems, problem solving, the integration of medical technology and patient care, professional responsibilities, and the development of expertise in laboratory analysis. Prerequisite: Permission of instructor.

MT 450 Chemistry Practicum (includes Phlebotomy Practicum) [2]
MT 451 Special Testing Practicum [.5]
MT 452 Urinalysis Practicum [.5]
MT 453 Blood Bank Practicum [2]
MT 454 Hematology Practicum (includes Phlebotomy Practicum) [2]
MT 455 Microbiology Practicum (includes Phlebotomy Practicum) [2]

Permission of instructor is required for the above courses.

**Radiologic Technology (Diagnostic Imaging)**

*Assistant Professors* Buffò, DeMaio (Director of Radiography), Kennedy (Department Chair)

*Director of Clinical Education* Richard

**Undergraduate Major Program (125 credits)**

The four-year program in Radiologic Technology leads to a Bachelor of Science and a Certificate in Radiology. The curriculum consists of basic science and math, general education including humanities, arts, and social sciences; and professional radiography core courses. Students are able to practice various radiography core courses. Students are able to practice various radiographic procedures and techniques within our fully energized x-ray laboratory.

Beginning in the second year and concurrent with didactic course requirements, our students complete clinical rotations at our local affiliate institutions. This “hands-on” experience occurs under the supervision of practicing medical imaging professionals and affords students the opportunity to clinically apply what they’ve learned in the classroom and lab. To offer students a comprehensive breadth of clinical experience, we maintain affiliations with Connecticut Children’s Medical Center (CCMC), Connecticut Orthopedics and Sports Medicine, Connecticut Valley Radiology, Grove Hill Medical Center, Hartford Hospital, Jefferson Radiology, Manchester Memorial Hospital, New Britain General Hospital, Open MRI of Connecticut, Rockville General Hospital, and Saint Francis Hospital and Medical Center.

By the end of the third year, students have typically completed all required didactic and clinical radiography courses. Once clinical competence of a predetermined list of radiographic procedures has been demonstrated, students are eligible to take the national examination in radiography offered by the American Registry of Radiologic Technologists (ARRT). Successful completion of this exam provides the radiography credential required to become a practicing x-ray technologist. Candidates for the credentialing examination must also comply with the Rules of Ethics outlined by the ARRT. Successful completion of this exam provides the radiography credential required to become a practicing x-ray technologist. Students with a history of criminal proceedings, military court-martial, regulatory agency disciplinary actions, and/or academic honesty violations may be ineligible for the AART credentialing examination. Please refer to the ARRT for further information on the standard of ethics for the profession (www.arrt.org).

During their fourth year, students fulfill the requirements of the baccalaureate degree, preparing them to take a leadership role in healthcare and society through an undergraduate concentration in management, education, communication, computer science, or advanced science and medicine. Students may also choose to specialize in either computed tomography (CT) or magnetic resonance imaging (MRI) during their fourth year.

Medical imaging is a vital component of the health care system. As a medical imaging professional, the radiologic technologist (or radiographer) employs X-rays and other forms of energy to assist in the diagnosis and treatment of illness and injury. Radiographers are employed in various healthcare institutions including clinics, hospitals, and medical centers, serving as assistants to radiologists and other
physicians. The typical medical imaging department consists of a vast array of sophisticated imaging department consists of a vast array of sophisticated imaging equipment and computer networks. This dynamic work environment requires the radiographer to combine state-of-the-art technical skills with superb patient care to produce high-quality medical images of the body.

Program Accreditation
The Radiologic Technology program is licensed and accredited by the State of Connecticut and accredited by the Joint Review Committee on Education in Radiologic Technology (www.jrcert.org), located at 20 North Wacker Drive, Suite 2850, Chicago, IL 60606-3182; 312.704.5300; mail@jrcert.org.

Transfer Admission
Students interested in potential transfer into the Radiologic Technology (RAD) program should consult with their academic advisor to facilitate the completion of the required prerequisite math and science course work. Due to the limited enrollment of the RAD program, the opportunity to transfer is also based on space availability. Decisions on transfer into the RAD major are made each May for the following fall semester. Candidates are selected from a waiting list by the program faculty. Transfer decisions are based upon the academic achievement of the wait-listed students. Please consult your academic advisor of the Department of Health Sciences for more information on transfer into the RAD program.

Admission Requirements
Students must meet requirements established by the College of Education, Nursing and Health Professions. Prior high school or college courses should include mathematics, biology, and either chemistry or physics. Students are encouraged to complete 20 hours of internship experience prior to beginning the professional component curriculum in their sophomore year.

Transfer Requirements
Students interested in potential transfer into the Radiologic Technology program should consult with their academic advisor to facilitate the completion of the prerequisite math and science coursework. Due to the limited enrollment of the RAD program, the opportunity to transfer is also based upon space availability. Decisions on transfer into the RAD major are made each May for the following fall semester. Candidates are selected from a waiting list by the program faculty. Transfer decisions are based upon the academic achievement of the wait-listed students. Please consult your academic advisor of the Department of Health Sciences for more information on transfer into the RAD program.

Requirements for the Major
In addition to completing the general education requirements for the Bachelor of Science program, students must complete the following core courses and radiologic technology courses:

Science and mathematics core courses:
- BIO 122 Biological Science
- BIO 212, 213 Human Anatomy and Physiology I, II
- HS 335 Physiologic Chemistry
- CH 114 Principles of Chemistry I
- PHY 190 Physics for Radiologic Technology
- M 110 Modeling with Elementary Functions

Professional core courses—44 credits in radiologic technology:
- RAD 226 Health Physics
- RAD 310 Patient Care I
- RAD 315 Radiographic Positioning I
- RAD 320 Clinical Experience I
- RAD 330 Image Production and Evaluation I
- RAD 331 Radiobiology
- RAD 332 Diagnostic Imaging
- RAD 335 Radiographic Positioning II
- RAD 340 Patient Care II
- RAD 345 Clinical Experience II
- RAD 360 Radiographic Positioning III
- RAD 365 Clinical Experience III
- RAD 405 Image Production and Evaluation II
- RAD 415 Clinical Experience IV
- RAD 420 Radiographic Pathology
- RAD 425 Clinical Experience V
- RAD 435 Clinical Experience VI

Each student is required to complete an additional 12 credits for a concentration. Optional tracts for concentration may include:

Option I: Computed Tomography

Option II: Magnetic Resonance Imaging

Option III: Advanced Science and Medicine

Option IV: Education

Option V: Management and Administration

Students choosing option V must consult the assistant dean in the Academic Services Office of the Barney School of Business when considering course selection. Careful course selection and advising by the Department of Health Sciences and Barney School faculty, and grades of B or better, may allow the student to complete the B.S. degree requirements simultaneously and get a head start in a graduate program.
in business or health administration. Students interested in an M.B.A. program should be aware that applicants must have completed EC 210 and EC 211 Principles of Economics and M 112 A Short Course in Calculus.

**Option VI: Computer Science**

**Option VII: Communication**

Prior to entering the clinical phase of the radiologic technology curriculum that begins in the sophomore year, the student is required to have completed courses with a grade point average (GPA) of 2.5 and to have an overall GPA of 2.5. The minimum passing grade for each designated radiography course is a C+

Refer to the *Radiologic Technology Student Handbook* for specific academic requirements and procedures for all RAD-designated courses. Refer to the *Radiologic Technology Student Handbook* for more information on additional costs associated with the program.

**Note:** Transportation to and from clinical experience affiliates is the responsibility of the student. Students are required to purchase their own uniforms, which are necessary while performing clinical internships at off-campus healthcare institutions.

*It is strongly recommended that students, with the advice of their personal physician, obtain Hepatitis B immunization prior to entering the sophomore year clinical component of the radiography curriculum.*

**Course Descriptions**

**RAD 226 Health Physics** [3] This course presents concepts related to ionizing radiation, including the basic physics of radionuclides and the biologic effects of interaction of radiation with matter. Other topics include structural shielding requirements, NRCP guidelines, personal monitoring considerations, radiation units and measures, as well as the basics of radiation safety. Prerequisites: BIO 112, 113, PHY 102, and permission of instructor.

**RAD 310 Patient Care I** [3] Introduces the student to the basic patient care procedures required for the performance of radiographic procedures. Includes medical and surgical asepsis, psychological needs of patient and first aid skills. Students are CPR-certified during this course. Prerequisite: BIO 113 or permission of instructor.

**RAD 315 Radiographic Positioning I** [4] The student learns the terminology related to basic radiographic positioning and anatomy of the chest, abdomen, and upper and lower extremities. Correlation of the anatomy with the specific positioning required for these studies is made by lecture and demonstration, both in class and at the hospital affiliate. Prerequisite: BIO 113 or permission of instructor.

**RAD 320 Clinical Experience I** [2] The student performs radiographic procedures of the chest, abdomen, and upper and lower extremities. Clinical competency evaluations are initiated during this semester. Prerequisite: BIO 113 or permission of instructor.

**RAD 330 Image Production and Evaluation I** [4] A study of the basic principles of radiographic imaging and the production of quality radiographs. The control and understanding of x-ray production, the factors of contrast and density, along with the proper film characteristics and processing of radiographs are developed. Emphasis is placed on experiments designed to give the student practical experience. Prerequisite: RAD 226 or permission of instructor.

**RAD 331 Radiobiology** [3] This course is designed to examine the effects of ionizing radiation on the human biological system. Radiation effects in an aqueous medium, dose response curves, the acute radiation syndrome, and genetic and somatic effects of low-level radiation are discussed. Prerequisites: BIO 112, 113, 226, and permission of instructor.

**RAD 332 Diagnostic Imaging** [3] This course is designed to acquaint the student with normal and abnormal anatomy and to correlate the anatomical and radiological findings. Abnormal anatomy is presented using all imaging techniques useful to demonstrate the particular type of pathology. This includes CT, MRI, ultrasound, and nuclear medicine imaging, along with routine diagnostic imaging techniques. Prerequisites: BIO 112, 113, CS 110, and permission of instructor.

**RAD 335 Radiographic Positioning II** [4] The positioning procedures for examinations of the shoulder girdle, vertebral column, and axial skeleton are correlated with the anatomy of these areas. Demonstrations of the routine projections are provided at the clinical affiliate. Prerequisite: RAD 315 or permission of instructor.
RAD 340 Patient Care II [3] Introduces the student to patient care procedures in the operating and emergency rooms, special procedures, and critical care areas. Prerequisite: RAD 310 or permission of instructor.

RAD 345 Clinical Experience II [2] The student performs radiographic procedures of the vertebral column, shoulder girdle, and axial skeleton. Clinical competency evaluations are performed during this course. Prerequisite: RAD 320 or permission of instructor.

RAD 365 Clinical Experience III [2] The students perform radiographic procedures of the digestive and urinary systems. Clinical competency evaluations are performed during this course. Prerequisite: RAD 345 or permission of instructor.

RAD 405 Image Production and Evaluation II [4] Advanced imaging production systems, such as fluoroscopy, computed radiography, and subtraction, are discussed. Quality assurance is also introduced so that the student is aware of proper testing procedures for technical aspects of the imaging chain. Prerequisite: RAD 330 or permission of instructor.

RAD 415 Clinical Experience IV [2] The student performs radiographic procedures of the skull and facial bones. Clinical competency-based evaluations are performed during this course. Prerequisite: RAD 365 or permission of instructor.

RAD 420 Radiography Pathology [3] This course is designed to acquaint the student with abnormal anatomy and pathologic findings by various radiographic procedures and imaging modalities. Prerequisite: RAD 410 or permission of instructor.

RAD 425 Clinical Experience V [3] Students perform specialized radiographic procedures, such as myelograms, mammograms, and venograms. They also rotate through ancillary imaging modalities, such as ultrasound, CT, MRI, and nuclear medicine. Clinical competency evaluations are performed during this course. Prerequisite: RAD 415 or permission of instructor.

RAD 435 Clinical Experience VI [3] The student performs final clinical competency evaluations of the extremities, vertebral column, and other specified regions of the body. Prerequisite: RAD 425 or permission of instructor.

RAD 450 MRI Instrumentation and Safety [3] Magnetic resonance imaging parameters are introduced. The formation of the MR signal is discussed as well as the essential components of an MR imaging system. Magnetic safety precautions that affect both patient and operator are discussed. Prerequisite: ARRT certification in radiography or nuclear medicine.

RAD 451 MRI Clinical Experience I [3] Under direct and indirect supervision, students observe and perform the clinical aspects of the field of magnetic resonance imaging. Students must complete 288 hours of MRI clinical experience. Prerequisites: Permission of MRI program director, current CPR certification, MRI magnetic safety screening, and health screening/physical examination. Corequisite: RAD 460. Laboratory fee.

RAD 452 Cross-sectional Anatomy [3] This course introduces the student to cross-sectional anatomy of the body. The cranial, thoracic, abdominal, and pelvic cavities will be studied in detail. Prerequisites: BIO 112, 113, and ARRT certification in radiography or nuclear medicine.

RAD 454 MRI Clinical Experience II [3] A continuation of Clinical Experience I. Under direct and indirect supervision, students observe and perform the clinical aspects of the field of magnetic resonance imaging. Students complete 288 hours of MRI clinical experience and complete clinical competency examinations. Prerequisites: RAD 451 and permission of MRI program director, current CPR certification, MRI magnetic safety screening and health screening/physical examination program. Corequisite: RAD 461. Laboratory fee.

RAD 456 MRI Pathology [3] The major pathologic conditions diagnosed by magnetic resonance imaging are presented. Emphasis is placed on pathology affecting the cranial cavity, vertebral column, and the major orthopedic applications for the knee and shoulder. The signal characteristics for the specified pathologic condition are discussed. Prerequisites: ARRT certification, RAD 450, RAD 452, and permission of instructor.

RAD 460 MRI Procedures I [3] This course introduces the student to clinical aspects of MRI procedures. The first semester of a two-semester sequence, the course covers the procedures that are performed as described through the clinical performance objectives of the entry level, level 1, and level 2 (brain, IAC, sella turcica, orbits, cervical spine, thoracic spine, lumbar spine, knee joint, hip joint, ankle joint, and shoulder joint). Prerequisite: RAD 425; corequisite: RAD 451. Laboratory fee.
RAD 461 MRI Procedures II [3] The second half of a two-semester sequence, this course continues the introduction to clinical aspects of MRI procedures. The course covers procedures that are performed as described through the clinical performance objectives of level 3 and level 4 (elbow joint, wrist joint, long bones, female pelvis, male pelvis, abdomen, liver, pancreas, MRCP, renal and adrenals, thorax and mediastinum, MRA of the head, carotids, abdominal MRA, and advanced MRI procedures). Prerequisite: RAD 460; corequisite: RAD 454. Laboratory fee.

RAD 470 CT Image Production [3] Computed tomography imaging parameters are introduced. The formation of computed tomography image is discussed as well as the essential component parts of a CT imaging system. Spiral/helical imaging parameters are included. Prerequisites: ARRT certification in radiography, current CPR certification, and appropriate state licensure; or permission of instructor.

RAD 471 CT Clinical Experience I [1–4] This clinical internship introduces the student to the practical skills necessary to operate a computed tomography imaging system. Clinical competency evaluations are performed during this course. Prerequisites: ARRT certification in radiography, current CPR certification, and appropriate state licensure; or permission of instructor.

RAD 476 CT Clinical Experience II [3–4] Students develop independent skills in obtaining computed tomography images of a variety of anatomical portions of the body. Clinical competency evaluations are performed during this course. Prerequisites: ARRT certification in radiography, RAD 452, RAD 470, RAD 471, current CPR certification, and appropriate state licensure; or permission of instructor.

RAD 480 CT Pathology/Pharmacology [3] The major pathological conditions diagnosed by CT imaging are presented. Emphasis is placed on pathology affecting the cranial cavity, vertebral column, abdominopelvic cavities, and the major orthopedic applications of computed tomography imaging. The uses for and administration of pharmacological agents for CT imaging are included. Prerequisites: ARRT certification in radiography, current CPR certification, appropriate state licensure, RAD 452, RAD 470, and RAD 471; or permission of instructor.

Respiratory Care

Assistant Professor and Program Director
Kennedy (Department Chair)
Clinical Associate Professor Pope (Medical Director)
Clinical Assistant Professors Albino, Farris, Heroux, Kopp, Mirtl, Renaldi, Ruthen
Clinical Coordinator Bernacki

Undergraduate Major Program (124 credits)
The four-year program in Respiratory Care leads to the Bachelor of Science and therapist-level certification. Based in the College of Education, Nursing and Health Professions, the program offers the student the best of two worlds: a liberal arts education and a highly skilled, allied health career. The four-year program is accredited by the Committee on Accreditation of Respiratory Care, and by the State of Connecticut. During the program the student pursues both on-campus and hospital-based study. Clinical study at Hartford Hospital begins during the second year and is integrated throughout the second, third, and fourth years. With the assistance of the clinical faculty, students select two areas of specialization that may include pediatrics, adult critical care, pulmonary function, patient assessment and education, cardiac laboratory techniques, allied health education, management, supervision, or research.

The program is open to qualified full- and part-time students and welcomes applications from associate-degreed, registered respiratory care practitioners.

Requirements for the Major
91 credits, including completion of all distribution requirements for the Bachelor of Science and the following science program:

22 credits in biology/health science:
BIO 122 Biological Science I [4]
BIO 212 Anatomy and Physiology I [4]
BIO 213 Anatomy and Physiology II [4]
HS 335 Physiological Chemistry [3]
BIO 272, 273 Genetics [3, 1]
BIO 440 Medical Microbiology [4]

8 credits in chemistry:
CH 114 College Chemistry I [4]
CH 136 College Chemistry II [4]

4 credits in physics:
PHY 102 Electricity and the Human Body [4]
All students must maintain an overall grade point average of 2.5. In addition, biology, chemistry, and physics courses must be completed with a grade of C or better and an overall science grade of 2.5 or better. Each respiratory care course must be completed with a grade of C or better, and an overall GPA of 2.5 or better must be maintained in the major.

Refer to the student Respiratory Care Clinical Manual for additional information about academic standards and clinical experiences. Students are responsible for transportation to clinical sites and for purchasing liability insurance.

Course Descriptions

RCP 210 Respiratory Pharmacology [2] This introductory course presents those pharmacological agents primarily used in the treatment of respiratory problems. Topics include a review of central nervous system anatomy and physiology, modes of drug action, indications and contraindications of various drugs and dosages. Course to be taken concurrently with RCP 213. Prerequisites: RCP 212 and BIO 212.

RCP 212 Respiratory Therapy [3] A theory-technique course that surveys various therapeutic modalities, including oxygen administration, humidity and aerosol therapy, chest physical therapy, rehabilitation, and home care. The course covers the operation of equipment utilized by the therapist, such as pressure regulators, flowmeters, nebulizers, compressors, and oxygen analyzers. Laboratory fee.

RCP 213 Pulmonary Diagnostics and Therapy [3] This course presents methods of diagnosis and therapy utilized by the respiratory care practitioner in the treatment of pulmonary diseases. Topics include arterial blood gas analysis, bronchoscopy, bedside pulmonary function testing, sputum evaluation, and oxygen therapy. Course to be taken concurrently with RCP 210. Prerequisites: RCP 212 and BIO 212. Laboratory fee.

RCP 214 Mechanical Ventilation and Resuscitation I [4] A theory-technique course designed to facilitate student comprehension of mechanical ventilators. The course includes cardiopulmonary resuscitation, manual ventilation, intermittent positive pressure breathing therapy, airway care, and maintenance of the continuously ventilated patient. Prerequisites: RCP 251 and CH 114. Laboratory fee.

RCP 215 Mechanical Ventilation and Resuscitation II [4] A theory-technique course designed to facilitate student comprehension of mechanical ventilators. The course includes cardiopulmonary resuscitation, manual ventilation, intermittent positive pressure breathing therapy, airway care, and maintenance of the continuously ventilated patient. Prerequisites: RCP 252 and CH 114. Laboratory fee.

RCP 251 Clinical Practice I [2] An introductory laboratory/lecture course covering medical terminology, patient assessment, gas laws, medical records, and introductory respiratory therapy principles. Prerequisite: RCP majors only. Laboratory fee.

RCP 252 Clinical Practice II [2] A laboratory/clinical practicum that enables the student to practice the methods and techniques learned in RCP 212 Respiratory Therapy, RCP 213 Pulmonary Diagnostics and Therapy, and RCP 214 Mechanical Ventilation and Resuscitation I. The student learns how to provide oxygen therapy, aerosol therapy, IPPB therapy, chest physical therapy, and airway care. Prerequisites: RCP 212 and RCP 251. RCP majors only. Laboratory fee.

RCP 321 Pulmonary Anatomy and Physiology [3] An in-depth study of the pulmonary system from fetal development to adulthood. Emphasis is on clinical diagnosis, pulmonary function testing, and disease processes. Case study presentations emphasize normal anatomy and physiology and pathophysiology of various diseases. Prerequisites: Bio 212 and 213, or permission of instructor.

RCP 322 Cardiovascular Anatomy and Physiology [3] An in-depth study of the cardiovascular system from fetal development to adulthood. Emphasis is on clinical diagnosis, cardiac function, and hemodynamic status testing and disease processes. Case study presentations emphasize normal anatomy and physiology and the pathophysiology of various diseases. Prerequisites: BIO 212 and BIO 213, or permission of instructor.

RCP 331 Medical-Surgical Problems [3] A survey course that deals with etiology, pathology, signs, symptoms, diagnosis, and treatment of diseases that affect the cardiovascular and pulmonary systems. The course concentrates on those diseases that require treatment by various respiratory therapy modalities. Prerequisites: RCP 321 and RCP 322.
RCP 333 Neonatal Pediatric Respiratory Care [3] A survey course that deals with the etiology, pathology, signs, symptoms, diagnosis, and treatment of neonatal and pediatric diseases affecting the cardio-pulmonary systems. The course concentrates on those diseases that require treatment by various respiratory therapy modalities. Prerequisites: RCP 321 and 322.

RCP 353 Clinical Practice III [3] A laboratory/clinical practicum that enables the student to perfect methods and techniques learned in RCP 212, RCP 213, RCP 214, and RCP 215. Students provide oxygen therapy, aerosol therapy, IPPB therapy, chest physiotherapy, and airway care. In addition, students maintain patients on continuous mechanical ventilators and draw arterial blood samples. Prerequisites: RCP 214 and RCP 252. RCP majors only. Laboratory fee.

RCP 354 Clinical Practice IV [3] A clinical practice session that allows an expansion of the techniques learned in RCP 353. Independent judgment is expected, with only periodic supervision and evaluation. The course is designed to effect the transition of the dependent student to a completely independent therapist. Prerequisites: RCP 213, RCP 215, RCP 331, and RCP 353. RCP majors only. Laboratory fee.

RCP 355 Clinical Practice V [3] A clinical practice session that allows students to function as independent practitioners in the acute care setting with only periodic supervision and evaluation. Various rotations within the hospital setting expose students to pulmonary laboratory, pediatrics and neonatology, and pulmonary rehabilitation, among others. Prerequisites: RCP 332 and RCP 354. RCP majors only. Laboratory fee.

RCP 443 Respiratory Insufficiency and Patient Rehabilitation [3] This problem-oriented course provides an in-depth understanding of the pathophysiology of chronic pulmonary disease and emphasizes the respiratory care practitioner’s role in current diagnostic, therapeutic, and rehabilitative approaches for long-term care. Prerequisites: RCP 332 and RCP 355.

RCP 460 Advanced Clinical Practice I [3] A specialized clinical practice rotation consisting of approximately 250 hours of clinical practice within one of several specialty areas (pediatric/neonatal care, adult critical care, pulmonary function laboratory, pulmonary rehabilitation, allied health education, allied health management, research). Students must complete two advanced clinical practice courses for graduation. Prerequisites: RCP 355 and RCP 332. Laboratory fee.

RCP 461 Advanced Clinical Practice II [2–3] The second of two specialized clinical practice rotations consisting of approximately 250 hours of clinical practice within one of several specialty areas of respiratory care (pediatric/neonatal care, adult critical care, pulmonary function laboratory, pulmonary rehabilitation, allied health education, allied health management, research). Students must complete two advanced clinical practice courses for graduation. Prerequisites: RCP 355 and RCP 332. Laboratory fee.
Department of Physical Therapy

Combined Bachelor of Science in Health Science and Doctor of Physical Therapy

Required credits for Bachelor of Science in Health Science: 126 minimum

Professor Certo (Chair, Department of Physical Therapy)
Associate Professors Ball, Crane, Gannotti, Wetherbee
Assistant Professors Gangaway, Goodworth, Higgins, Leard, Veneri

The Department of Physical Therapy offers a combined Bachelor of Science in Health Science/Doctor of Physical Therapy program. Graduates are prepared to meet the intellectual, social, cultural, and economic challenges of our changing healthcare system. A Bachelor of Science degree is a requirement for entry into the Doctor of Physical Therapy program.

The Doctor of Physical Therapy program received reaccreditation from the Commission on Accreditation of Physical Therapy Education in 2004. The Doctor of Physical Therapy program was approved by the Department of Higher Education, State of Connecticut, in 2005.

Advising

Students enrolled in the undergraduate program are assigned faculty advisors in the Department of Physical Therapy.

The department participates in first-year and transfer dialogue groups to assist new students in adjusting to academic and campus life. Students meet in small groups regularly with faculty advisors to discuss educational goals, curricular and extracurricular options, and career opportunities. The relationship developed between advisors and advisees helps to ensure students’ academic success at the University.

Transfer Students

The Physical Therapy program welcomes applications from students who have attended other colleges and universities. Applicants who have completed 30 or more credits are not typically required to submit high school transcripts or admissions test scores. Prospective transfer students may apply for admission to the undergraduate program through the Office of Admission.

Facilities

The on-campus facilities of the Department of Physical Therapy are located in Charles A. Dana Hall, which is part of the new Integrated Science, Engineering, and Technology complex. The program has two Hoffman physical therapy clinical skills teaching laboratories and three dedicated research laboratories for conducting both faculty and faculty-mentored research activities. These research spaces include a human performance research lab for the study of all aspects of human movement as they relate to biomechanical principles; a motor control lab that contains specialized equipment and technology for research related to motor control, human movement, and motor learning; a balance and mobility laboratory for study and research of physical variables on human motor control. Balance responses can be measured with acceleration, velocity and position-based sensors to measure muscle activity.

University Physical Therapy, LLC, is a faculty private-practice facility located in Health Services at the Sports Center. Physical therapy providers include adjunct and full-time faculty from the physical therapy program. Students in the physical therapy program are linked to the clinic through various professional courses called Integrated Clinical Experiences. In addition, the clinic serves as a site for student internship.

Off-Campus Clinical Facilities

Clinical education settings for the physical therapy program are selected on the basis of their ability to provide supervision by professional staff, to offer services to diverse client populations, and compatibility with the University’s and the program’s mission and philosophy. The department currently has contracts with approximately 400 facilities in the Greater Hartford area and selected sites throughout the United States. Practice settings include healthcare, educational, and community (public and private) agencies.

Admission to the Program

Before being considered for entrance into the Doctor of Physical Therapy program, all students must complete an appropriate Bachelor of Science degree.

Highly qualified students will enter the University and enroll in the Bachelor of Science in Health Sciences. Upon graduation from the B.S. in Health Sciences program, students moving into the Doctor of Physical Therapy program
will be reviewed by the admissions committee to ensure that they have completed the prerequisites and achieved a 3.0 GPA in the sciences and a 3.0 GPA overall. All required courses must be passed with a 2.0 or better. Science courses can be retaken only once. Transfer course grades are not factored into the University GPA. However, transfer science course grades are included in the calculation of the science GPA. Students must also display the ethical personal and professional qualities needed to fulfill the role of a physical therapist.

The undergraduate program for the Bachelor of Science in Health Sciences consists of eight semesters of foundational science course work with biological and social sciences, general education requirements, liberal arts education in the humanities, and a health science core of courses. Students are also required to complete a series of seven pre-physical therapy seminar courses. These seminars facilitate the mentoring of students in the profession of physical therapy. Several options for minors are also available within the program.

A fast-track program of study is available for those students who wish to expedite their undergraduate program. This program consists of six academic semesters, with two full-time summer sessions. Limited options for minors are also available within this plan of study.

**Academic Requirements for the Major**

All courses below must be completed with a grade of C or higher.

**23 credits in biology:**
- BIO 122 Biological Sciences [4]
- BIO 212, 213 Anatomy and Physiology I, II [4, 4]
- BIO 272W Genetics [3]
- BIO 440 Medical Microbiology [4]

**12 credits in chemistry:**
- CH 110, 111 College Chemistry I, II [4, 4]
- CH 136 Principles of Chemistry [4]

**6 credits in health sciences:**
- PRPT 516 Exercise Physiology [3]
- PRPT 520 Functional Anatomy [3]

**One upper-level health science elective [3]**

**12 credits in mathematics/physics:**
- M140 Pre-Calculus with Trigonometry [4]
- M 112 Short Course in Calculus [3]
- PHY 102 Electricity and the Body [4]

**12 credits in psychology:**
- PSY 101 Introductory Psychology [3]
- PSY 132 Human Development [3]
- PSY 262 Abnormal Psychology [3]
- PSY 372 Inferential Statistics [3]

**6 credits in social sciences:**
- SOC 110 Introduction to Sociology [3]
- One upper-level social science course [3]

**3 credits of pre-physical therapy seminars:**
- PRPT 100 Pre-Physical Therapy Seminar I [1]
- PRPT 200 Pre-Physical Therapy Seminar II [1]
- PRPT 201 Pre-Physical Therapy Seminar III [1]
- PRPT 300 Pre-Physical Therapy Seminar IV [1]
- PRPT 301 Pre-Physical Therapy Seminar V [1]
- PRPT 400 Pre-Physical Therapy Seminar VI [1]

The Doctor of Physical Therapy is a three-year, full-time program beyond the undergraduate degree. For details of the Doctor of Physical Therapy curriculum, see the University of Hartford Graduate Bulletin.

**Course Descriptions**

**PRPT 100 Pre-Physical Therapy Seminar I [1]** This course guides first year pre-physical therapy students during their initial bachelor in health science course work. Students explore the history of the profession, the physical therapist’s role, and career paths in healthcare. Participation in the Physical Therapy Student Association is expected, as well as attendance at the Doctoral Physical Therapy Research Update. Prerequisite: B.S.H.S. to D.P.T. major.

**PRPT 200 Pre-Physical Therapy Seminar II [1]** This course is designed to continue the professional introduction to pre-physical therapy students initiated in PRPT I. Contemporary issues regarding access to healthy lifestyles and health care will be discussed. Students consider these issues in light of their ethical obligations as future physical therapists. Additionally, students are introduced to the concepts of patient’s rights. Students develop a research topic and develop a paper as the culminating requirement. Students present bibliographies and drafts of the paper with the professor in individual meeting. Attendance at a Physical Therapy Student Association event is also required. Prerequisite: B.S.H.S. to D.P.T. major.
PRPT 201 Pre–Physical Therapy Seminar III
[1] This course continues to guide second year pre–physical therapy students during their bachelor in health science course work to attain competency in written and oral communication skills. Students hear presentations from faculty and students regarding aspects of the profession and the physical therapy graduate and undergraduate curriculum. A healthcare topic written assignment and oral defense enable assessment of the student’s oral and written skills. Attendance at a Physical Therapy Student Association event is required. Prerequisite: B.S.H.S./D.P.T. major.

PRPT 300 Pre–Physical Therapy Seminar IV
[1] This course is designed to continue the professional introduction to pre–physical therapy students that was initiated in PRPT 100 and PRPT 200. Students research a topic and develop an oral and written summation of their findings. Oral summaries are reviewed with the professor on an individual basis. Contemporary issues in healthcare regarding aging populations, cultural diversity, palliative care, and disability are discussed. Additionally, students are required to attend the PT students’ presentations of their research in December to introduce them to the research process. Prerequisite: B.S.H.S./D.P.T. major.

PRPT 301 Pre–Physical Therapy Seminar V
[1] This course is designed to guide third-year pre–physical therapy students during their bachelor’s in health science course work. Topics include owning a physical therapy practice, clinical education placement, aquatic therapy, and specialized career paths. Students gain understanding of the basic elements of the research process and outline a senior thesis. Students are required to participate in Community Day and the Scientific Inquiry Research Presentation. Participation in the Physical Therapy Student Association is expected. Prerequisite: B.S.H.S. to D.P.T. major.

PRPT 400 Pre–Physical Therapy Seminar VI
[1] This course continues to guide fourth year pre–physical therapy students during their bachelor in Health Science coursework. Guest lecturers are provided by clinicians regarding their professional development plan. Students prepare a draft of a thesis paper and complete a review of their academic record to ensure preparedness for entry into the graduate physical therapy program. Membership in the Physical Therapy Student Association is expected. Prerequisite: B.S.H.S. to D.P.T. major.

PRPT 401 Pre–Physical Therapy Seminar VII
[1] This course continues to guide fourth-year pre–physical therapy students during their Bachelor of Health Science course work to attain competence in written communication skills. Students work with their faculty advisor/assigned faculty member to complete a thesis paper that is well constructed and meets or exceeds the expectation of benchmark 3 using the AACU grading rubric. Prerequisite: B.S.H.S. to D.P.T. major.

PRPT 516 Exercise Physiology [3] This course presents the metabolic, neuromuscular, cardiovascular, respiratory, and hormonal regulation of exercise, and the subsequent systemic adaptations to dynamic and resistive exercise. Other relevant topics include principles of physical training, exercise prescription for health and fitness, optimal nutrition for human performance, environmental considerations, and physical activity as treatment for a variety of chronic diseases and conditions. This course also addresses guidelines and standards recommended by a variety of professional organizations, including the American College of Sports Medicine; the American Heart Association; the American Association of Health, Physical Education, and Recreation; the American Physical Therapy Association; and the National Strength and Conditioning Association. Prerequisites: BIO 212, BIO 213, and B.S.H.S. to D.P.T. student; or permission of the instructor. Laboratory fee.

PRPT 520 Functional Anatomy [3] This is a lecture-based course used to bridge the gap between undergraduate Anatomy and Physiology course work and graduate Gross Anatomy and Kinesiology course work. The course allows for a hands-on approach to understanding the musculoskeletal system and its function, and introduces key descriptive terms to further prepare students in the health sciences. The primary focus is on skeletal joints, the muscular components, and the neurovascular supply to each of these components. Prerequisites: BIO 212, BIO 213, and B.S.H.S. to D.P.T. student; or permission of instructor.

PRPT 580 Independent Study in Physical Therapy [1–4] This course provides instruction and/or laboratory experiences to increase the depth and breadth of understanding the current trends in physical therapy practice and research. Prerequisite: Junior or senior B.S.H.S./D.P.T. student, or permission of instructor.
PRPT 590 Independent Study in Physical Therapy [1–4] This course provides instruction and/or laboratory experiences to increase the depth and breadth of understanding the current trends in physical therapy practice and research. Prerequisite: Junior or senior B.S.H.S. to D.P.T. student or permission of instructor.

Combined Bachelor of Science in Health Science and Master of Science in Prosthetics and Orthotics

(B.S. degree: 121 credits minimum)

Professor Certo (Chair, Department of Physical Therapy)
Associate Professors Ball, Crane
Assistant Professors Gangaway, Goodworth, Higgins, Leard

The Department of Physical Therapy offers a unique five year combined Bachelor of Science in Health/Master of Science in Prosthetics and Orthotics (B.S./M.S.P.O.). Graduates are prepared to meet the intellectual, social, cultural, and economic challenges of our changing healthcare system. The National Commission on Orthotic and Prosthetic Education has mandated that all prosthetic and orthotic educational programs be elevated to the master’s degree level by 2012. The currently accredited Prosthetics and Orthotics program is a five-year program that has been approved by the State of Connecticut Department of Higher Education.

Advising

Students enrolled in the combined Bachelor of Science in Health Science/Master of Science in Prosthetics and Orthotics are assigned faculty advisors in the Prosthetics and Orthotics program. The program participates in first-year and transfer dialogue groups to assist new students in adjusting to academic and campus life. Students meet regularly in small groups, with faculty advisors to discuss educational goals, curricular and extracurricular options, and career opportunities. The relationship developed between advisors and advisees helps to ensure students’ academic success at the University.

Transfer Students

The program in prosthetics and orthotics welcomes applications from students who have attended other colleges and universities. Applicants who have completed 30 or more credits are not required to submit admissions test scores. Prospective transfer students may apply for admission to the undergraduate program through admissions.

Facilities

The on-campus facilities of the Department of Physical Therapy are located in Charles A. Dana Hall, which is part of the new Integrated Science, Engineering, and Technology complex. The department has two Hoffman physical therapy clinical skills teaching laboratories and one dedicated clinical teaching lab for prosthetics and orthotics. There are three dedicated research laboratories for conducting both faculty research and faculty-mentored student research activities. These research spaces include a human performance research laboratory for the study of all aspects of human movement as they relate to biomechanical principles; a motor control laboratory with specialized equipment and technology for research into motor control, human movement, and motor learning; and a balance and mobility laboratory for the study and research of the interaction of physical variables on human motor control. Balance responses can be measured with acceleration, velocity, and position–based sensors to measure muscle activity.

Several private-practice facilities are located in the vicinity, with providers that include adjunct University faculty and faculty from the prosthetic and orthotic community. Students in the Prosthetics and Orthotics program are linked to the clinic through various professional opportunities for clinical experiences. In addition, these clinics serve as a site for integrated student internships.

Off-Campus Clinical Facilities

The Hanger facility in Newington, Conn., consists of state-of-the-art educational lecture facilities as well as a full-service fabrication facility for comprehensive custom fabrication of all prosthetic and orthotic designs. These facilities are used by University of Hartford students in the program for all master’s-level specialty courses.

Integrated internships for the Prosthetics and Orthotics program are selected on the basis of each facility’s ability to provide supervision by certified professional staff, to offer services to diverse client populations, and compatibility with the University’s and program’s mission and philosophy. The program currently has numerous local facilities in the Greater Hartford area. Practice settings include hospital-based in-patient, emergency orthotic management, educational, and outpatient community facilities.

Admission to the Program

Highly qualified students enter the University and enroll in the Bachelor of Science in Health Sciences program offered by the De-
partment of Physical Therapy. Upon graduation, students moving into the Master of Science in Prosthetics and Orthotics program are reviewed by the admissions committee to ensure that they have completed the prerequisites and maintained a 3.0 GPA in the sciences and a 3.0 GPA overall. All prerequisite courses must be passed with a 2.0 or better. Transfer science course grades are included in the calculation of the science GPA but are not included in the University GPA. Students must also display ethical personal and professional qualities needed to fulfill the role of a prosthetist/orthotist.

The undergraduate program for the Bachelor of Science in Health Sciences consists of eight semesters of foundational science course work with biological and social sciences, general education requirements, and liberal arts education in the humanities. Several options for minors are also available within the program.

**Academic Requirements for the Major**

Students in the combined Bachelor of Science in Health Sciences/Master of Science in Prosthetics and Orthotics are required to complete all of the general education requirements for the Bachelor of Science in Health Science degree offered by the Department of Physical Therapy as well as the following science/math requirements:

12 credits in biology:
- BIO 122 Biological Science [4]
- BIO 212, 213 Anatomy and Physiology I, II [4, 4]

12 credits in chemistry:
- CH 110, 111 College Chemistry I, II [4, 4]
- CH 136 Principles of Chemistry [4]

9 credits in mathematics/physics:
- M 140 Pre-calculus/Trigonometry [4]
- PHY 102 Electricity and the Body [4]

12 credits in psychology:
- PSY 101 Introductory Psychology [3]
- PSY 132 Human Development [3]
- PSY 262 Abnormal Psychology [3]

9 credits in sociology:
- SOC 110 Introduction to Sociology [3]
- SOC Elective [3]

25 credits in preprofessional sciences:
- PRPT 516 Exercise Physiology [3]
- PRPO 200 Introduction to Prosthetics and Orthotics [3]
- PRPO/MSPO 500 Gross Anatomy [2]
- PRPO/MSPO 501 Gross Anatomy Laboratory [2]
- PRPO/MSPO 502 Kinesiology [2]
- PRPO/MSPO 503 Kinesiology Laboratory [1]
- PRPO/MSPO 504 Clinical Foundations [2]
- PRPO/MSPO 511 Transtibial Prosthetics [4]
- PRPO/MSPO 513 Biomechanics [2]
- PRPO/MSPO 514 Biomechanics Laboratory [1]
- PRPO 550 Integrated Internship I [0]

The professional portion of the Prosthetics and Orthotics program will be published in a future edition of the *University of Hartford Graduate Bulletin*.

**PRPO 200 Introduction to Prosthetics and Orthotics** [3] This is an introductory course designed to provide undergraduate students from varying majors with an introduction to the fields of prosthetics and orthotics. Students explore the history of the profession and the prosthetist’s and orthotist’s role within healthcare. Students are introduced to all facets of the field, including clinical application, engineering, design, and new technology. Professional options within the professions also are discussed.