

# College of Agriculture and Natural Resources

Kirklyn M. Kerr, B.S., D.V.M., M.S., Ph.D., *Dean, College of Agriculture and Natural Resources*

Cameron Faustman, Ph.D., *Associate Dean, College of Agriculture and Natural Resources*

Patricia Jepson, Ph.D., *Academic Advisory Center Director*

In 1862, Congress passed the Morrill Land Grant Act providing grants of federal land to each state. Funds from the sale of these lands were used in establishing a college teaching agriculture and related subjects in each state. Subsequent federal acts have enlarged the responsibilities of these colleges. Today they continue to serve agriculture and society in many ways through a variety of educational programs. The University of Connecticut is the land-grant university in Connecticut. The College of Agriculture and Natural Resources offers instruction at both undergraduate and graduate levels. Research and experimental work is carried on through the Storrs Agricultural Experiment Station. Educational and service programs are conducted throughout the State by the Cooperative Extension System. The College of Agriculture and Natural Resources is supported by both federal and state appropriations and contributions from the private sector.

Agriculture has evolved to engage scientists concerned with food, people, and health in a manner that is economically viable and environmentally sustainable. The College of Agriculture and Natural Resources maintains strong programs in fields such as agricultural biotechnology, allied health sciences, cloning, diagnostic and environmental sciences, health promotion, landscape architecture, medical technology, nutritional biochemistry, pathobiology, pre-veterinary study, resource economics, and wildlife management.

The College has extensive facilities and operations to supplement and enhance instruction, learning experiences, and research. Laboratories, plants, animals, greenhouses and other related resources – both on and off campus – allow students to apply knowledge and skills in real-world, professional environments. The Agricultural Biotechnology complex, Center for Land Use Education and Research, Center for Environmental Health, Connecticut Institute of Water Resources, Connecticut State Climate Center, Food Marketing Policy Center, and the Northeastern Research Center for Wildlife Diseases are all integral components of the College of Agriculture and Natural Resources.

The following departments offer undergraduate instruction in the College: Agricultural and Resource Economics, Allied Health Sciences, Animal Science, Natural Resources Management and Engineering, Nutritional Sciences, Pathobiology and Veterinary Science, and Plant Science. The Directory of Courses section of this *Catalog* describes the course offerings of these departments. Other courses are offered under the departmental listing Agriculture and Natural Resources.

The four-year curriculum leads to the Bachelor of Science degree.

**Admission Requirements.** Students may enter the College of Agriculture and Natural Resources directly upon admission to UConn as a freshman or transfer student. New students who select Allied Health Sciences will be admitted as Allied Health Sciences majors and advised by the Department of Allied Health Sciences. Professional majors in the Department of Allied Health Sciences (Dietetics, Diagnostic Genetic Sciences and, Medical Technology) are competitive junior/senior year programs with additional admission procedures and requirement as outlined below.

See Admission to the University and New England Regional Student Program.

**Scholarships.** Over \$350,000 in scholarships and awards are available to students in the College of Agriculture and Natural Resources.

**Advisors Assigned by Major:** Departmental Advisors are assigned to students upon entry into the College of Agriculture and Natural Resources according to a student's major and area of special interest. Advisors assist students in the selection of appropriate courses and help them develop an individualized program of study that will meet educational and career goals. The office of the Associate Dean for Academic Programs and the Academic Advisory Center of the College of Agriculture and Natural Resources also support students and advisors.

## Bachelor's Degree Requirements

Upon recommendation of the faculty the degree of Bachelor of Science is awarded by vote of the Board of Trustees to students who have met the following requirements: (1) earned a total of 120 degree credits; (2) earned at least a 2.0 cumulative grade point average for the number of calculable credits for which they have been registered; (3) earned at least a 2.0 cumulative grade point average for all courses included in the 36 credit numbered 2000 or above requirement for the major; (4) met all the requirements of the University of Connecticut, the College of Agriculture and Natural Resources, and their individual major as outlined below.

### General Education Requirements

All students in the College of Agriculture and Natural Resources must meet the University-wide General Education Requirements (GER) as described in the "Academic Regulations" section of this *Catalog*.

### 36 Credit Requirement for All Majors

Students in all majors of the College of Agriculture and Natural Resources must successfully complete at least 36 credits of courses numbered 2000 or above in or relating to their major. Courses for this 36 credit group may be taken from specific major requirements (as listed below for some majors), or may be selected according to a student's individual educational and career goals. This group of courses must:

1. be numbered 2000 or above
2. be approved by the student's advisor and department head
3. be taken at the University of Connecticut
4. be taken in two or more departments
5. include at least 15 credits from departments in the College of Agriculture and Natural Resources.
6. have a combined grade point average of at least 2.0
7. not include more than 6 credits (combined) of independent study, internship, or field studies
8. not be taken on Pass/Fail
9. not include more than 6 credits of S/U coursework

### Plan of Study

Students should work closely with their advisors to review requirements, recommended courses, and career goals. Each student should prepare a tentative plan of study, outlining all courses, with an academic advisor as early as possible, but in no case later than at the start of the junior year. A final plan of study, approved by the major advisor and the department head, must be filed with the Degree Auditor no later than the end of the fourth week of classes of the semester in which a student expects to graduate. Professional majors in the Department of Allied Health Sciences do not require a plan of study.

### Specific Course Requirements for Individual Majors

Students must complete specific courses for individual majors as outlined below. Many courses may be used to meet more than one requirement.

## Undergraduate Majors

Students in most majors have a great deal of latitude in the choice of courses and may emphasize a range of options to meet personal objectives. Students may prepare for career opportunities in such diverse activities as research, production, distribution, business and industry, public service, health sciences, professional service, education, communications, product development, international development, environmental protection, and community resource development. In addition to formal course work students may participate in independent study projects, field internships, cooperative education, and practicums. Students may also prepare for formal education beyond the Bachelor of Science degree.

Advisors are available to discuss requirements, recommended courses, and career opportunities of the various majors with current and prospective students.

### Agricultural Education

Individuals preparing for a career in Agricultural Education obtain content area expertise by selecting a major and starting in the College of Agriculture and Natural Resources. Certification requirements and a Masters degree in Agriculture Education will be completed in the Neag School of Education.

Students interested in agricultural education should refer to the Neag School of Education section of this *Catalog*.

## Agriculture and Natural Resources

This interdisciplinary major is designed for students who want broad training in agriculture and natural resources. Students work with their advisors to develop a personalized program of study.

To satisfy the general education requirement for the computer technology competency, Agriculture and Natural Resources majors must meet the University's entrance expectations. They will not have to meet any advanced requirement for computer technology.

To satisfy the general education requirement for information literacy, students must pass ENGL 1010 or 1011 and one course approved for information literacy in any department of the College of Agriculture and Natural Resources.

To satisfy the general education requirement for writing in the major, students must pass one approved 2000-level or above W course in any department of the College of Agriculture and Natural Resources.

## Allied Health Sciences

### Admission

Freshmen are admitted into the Department of Allied Health Sciences as Allied Health Sciences (AHS) majors. Students are advised in the Department of Allied Health Sciences. During the spring of their sophomore year, students may remain an Allied Health Sciences major, may further define their major by petition into a concentration within the Allied Health Sciences major, or apply to a Professional Program (admission to a professional program or to a concentration within the AHS major is not automatic; refer to program admission information).

The **Allied Health Sciences** major, taken with or without the concentrations in Diagnostic Sciences or Health Promotion Sciences, is designed specifically for students who would like to pursue a broad-based baccalaureate degree in Allied Health or who would like to pursue *graduate* health programs that require a baccalaureate degree for admission. Working with an advisor, students design a flexible plan of study that they can tailor to meet their professional and personal goals. Students combine university general education and required coursework in Allied Health with coursework from departments across the university to tailor their baccalaureate degree to meet requirements for admission to various graduate programs.

**Diagnostic Sciences** concentration in Allied Health Sciences prepares students interested in health specialties which involve laboratory procedures for diagnostic purposes or who are looking to pursue allied health fields requiring a strong health science and pathology background. This concentration is also designed for students seeking admission to post baccalaureate (graduate) programs such as, but not limited to, Physician Assistant, Pathology Assistant, Medical or Dental School, Epidemiology, Physical Therapy, Occupational Therapy, and Advanced Nurse Practitioner or the Department of Allied Health Sciences' Post-Baccalaureate Certificate Programs.

The **Health Promotion Sciences** concentration in Allied Health Sciences prepares students interested in working in a setting such as health and social service agencies, worksite health promotion programs, government health agencies, hospital wellness programs, business, industry, and educational settings that emphasize health promotion. This concentration is also designed for students seeking admission into graduate programs such as the Department of Allied Health Sciences Master's Program in Health Promotion as well as for those looking to enroll in graduate programs such as Public Health, Gerontology, Health Education, Health Administration, Health Policy and Law, Health Psychology, Physician Assistant, and Advanced Nurse Practitioner.

### Admission – Allied Health Sciences Concentrations

Admission to the Diagnostic Sciences or Health Promotion Sciences concentrations within the Allied Health Sciences major requires a minimum of 45 earned credits, a cumulative GPA of 2.2 or higher, academic good standing, and successful completion of one college level (1000-level or higher) course in each of the following: biology, chemistry, and mathematics.

To satisfy the general education requirements for computer technology and information literacy competencies, Allied Health Sciences majors must meet the University's entrance expectations. They will not have to meet any advanced requirements for computer technology and information literacy competency.

To satisfy the general education requirement for writing in the major, Allied Health Sciences students must pass AH 4241W.

The course requirements listed below are those of the Department of Allied Health Sciences and may also satisfy the University's General Education requirements.

### Required courses in basic sciences:

#### Allied Health Sciences (no concentration) and Allied Health Sciences with Health Promotion Sciences concentration:

CHEM 1122 or 1124Q or 1127Q; PHYS 1010Q or CHEM 1125Q or CHEM 1128Q; BIOL 1107; NUSC 1165; PSYC 1100, 1101 or 1103, 2300, 2400; MATH 1040Q, 1060Q or higher; STAT 1000Q or 1100Q; and two (2) additional science courses approved by the Department of Allied Health Sciences

#### Allied Health Sciences with Diagnostic Sciences Concentration:

CHEM 1124Q or CHEM 1127Q; CHEM 1125Q or CHEM 1128Q; BIOL 1107; PHYS 1201Q and 1202Q; PSYC 1100; MATH 1060Q or higher; STAT 1000Q or 1100Q; and two (2) additional science courses approved by the Department of Allied Health Sciences.

Writing in the major - AH 4241W

**All Allied Health Sciences majors must pass the following courses: Group A.** AH 4241W, 4242, 4243, 4244

**Allied Health Sciences Group B.** Courses (12 credits from the following): (1) A minimum of 6 of those credits must be chosen from: AH 3021, 3133, 3175, 3203, 3231, 3234, 3270, 3271, 3272, 3273, 3274; DGS 3222, 3226, 4234; MT 3131; MLS 3101, 3111, 3121; (2) NUSC 2200, 4236, 4250; PVS 3100, 4300

#### Allied Health Sciences with Diagnostic Sciences concentration Group B.

(12 credits from the following): (1) A minimum of 6 of those credits must be chosen from: AH 3021; 3133; DGS 3222, 3226, 4234; MT 3131; MLS 3101, 3121; (2) PVS 3100, 4300; NUSC 4236, 4250

#### Allied Health Sciences with Health Promotion Sciences concentration Group B.

(12 credits from the following): (1) A minimum of 6 of those credits must be chosen from: AH 3133, 3175, 3203, 3231, 3234, 3270, 3271, 3272, 3273, 3274; MLS 3111; (2) NUSC 2200, 4236, 4250

Optional Independent Study or Internship (6 credits maximum applied to major requirements): AH 3091, 3099; DIET 3099; DGS 3999; MLS 4099; MT 4099.

36 Credits Major Requirement: Students majoring in Allied Health Sciences (with or without a concentration) must complete 36 credits of 2000-level or above courses meeting the following requirements. Courses outlined in Groups A and B above may be included in the 36-credit group.

1. Numbered 2000 or above
2. Be completed at the University of Connecticut
3. Approved by the Department of Allied Health Sciences
4. Courses can not be taken on pass/fail
5. Include 24 credits (core and major courses) in the College of Agriculture and Natural Resources of which a minimum of 18 credits must be in the Department of Allied Health Sciences
  - a. Core Courses (12 credits) - AH 4241W, 4242, 4243, 4244
  - b. Additional Major Courses (12 credits) - Include at least 12 credits in the College of Agriculture and Natural Resources of which a minimum of 6 credits are in the Department of Allied Health Sciences. Courses chosen can be selected based on the student's interest, ability, and intended post baccalaureate program and career.
6. Include at least 12 credits of Related Cognate Courses taken in departments outside the College of Agriculture and Natural Resources. Courses chosen can be selected based on the student's interest, ability, and intended post baccalaureate program and career.
7. A grade of "C" or higher must be earned in all core, major, and related cognate courses

## Allied Health Sciences - Professional Majors

**Cytotechnology, Dietetics, Diagnostic Genetic Sciences, and Medical Technology** are Professional programs/majors in the Department of Allied Health Sciences. These professional majors are competitive junior/senior programs with additional admission requirements, certifications, and health documentation as listed below. Please contact the department for questions and further information on requirements that may vary for each program. Currently, students are not being accepted to the Cytotechnology program.

The admission requirements and mandatory documentation and certifications are *only* required of students admitted to the Department of Allied Health Sciences' Professional majors. All other students do not need to complete this documentation unless required to do so as part of an optional internship course.

### Admission

Admission for the Professional majors is competitive. The Professional majors in the Department of Allied Health Sciences are junior/senior programs. Students apply to their major(s) of choice in the spring of their sophomore year. To apply, students must have earned a minimum of 60 credits, completed all University General Education requirements, and satisfied the prerequisite science courses of the major of application. Students are advised to complete all application procedures as early as possible in their fourth semester, but no later than February 1st annually. Admission is for the fall semester.

**Guaranteed Admission Policy:** Although freshmen are not admitted directly into the professional majors, the Department of Allied Health Sciences has a Guaranteed Admission Offer. This offer provides freshmen with direct admission in the junior year to the professional major of their choice if the student fulfills the criteria described under each major below. The Guaranteed Admission Offer is made to provide students with a clear and supportive environment in which to complete admission prerequisites and achieve their academic goals in the Department of Allied Health Sciences.

In order to qualify for Guaranteed Admission to the Professional majors in Diagnostic Genetic Sciences, Dietetics, or Medical Technology a student must: (1) have entered the University as a freshman; (2) apply to the major within two years of their freshman admission; (3) complete 3 successive semesters of full time study of required course work at the University of Connecticut; (4) must earn an Overall Grade Point Average of a minimum of a 3.2 for Diagnostic Genetic Sciences or must earn an Overall Grade Point Average of a minimum of a 3.0 for Dietetics, or Medical Technology, and (5) meet all Admission Requirements and file a Department of Allied Health Sciences Application by the deadline. Students meeting all of these criteria are guaranteed admission to the major.

University of Connecticut students who do not meet the Guaranteed Admission Offer will be reviewed competitively on a space available basis. Transfer Applicants to the professional majors will be reviewed on a space available basis once matriculated University of Connecticut students have been reviewed and offers of admission have been confirmed.

**Health.** In addition to pre-entrance University requirements, students admitted to the Professional Majors in the Department of Allied Health Sciences are required to have a tetanus immunization within the past ten years; physical examination; annual tuberculin test (with chest x-ray for positive reactors); rubella and rubeola titers (with vaccine if titer is negative); and varicella titer. Physical examinations, tuberculin tests and chest x-rays as indicated are planned through the University Student Health Services. In addition to the basic health screening requirements students in all professional majors are required to have Hepatitis B Immunization. Students are responsible for payment of health examinations and laboratory tests not covered by their personal insurance. Students who fail to provide written documentation that they have met the above stated health requirements will not be allowed in the clinical setting.

**Education Certification.** The Department of Allied Health Sciences will provide annual mandatory educational sessions so that students entering a professional major and who are entering the clinical setting are in compliance with both the OSHA Bloodborne Pathogen Standards and are knowledgeable of the requirements for compliance with the Health Insurance Portability and Accountability Act (HIPAA). Students who fail to provide written documentation that they met both the above stated OSHA and HIPAA requirements will not be allowed in the clinical setting.

**CPR.** Dietetics students are required to have Adult or Healthcare Provider cardiopulmonary resuscitation certification upon admission into the professional major. Students in the Diagnostic Genetic Sciences or Medical Technology majors are not required to have CPR certification. CPR certification must be kept current until graduation.

**Clinical Experiences.** Each of the professional major curricula of the department requires education experiences in clinical settings. Assignment to clinical placements is contingent upon successful completion of the appropriate prerequisite course work and the judgment of the faculty of the preparedness of the student for safe practice. Additionally, students entering clinical placements must complete clinical documentation to include but not limited to a Medicare Exclusion waiver and in some clinical settings a criminal background check.

Students will be notified if they are attending a clinical facility that requires this documentation. Students are responsible for payment of criminal background checks if part of their clinical affiliation.

**Fees and Expenses.** Students can expect fees to approximate those of other University students. The professional majors have added expenses for texts, uniforms and clinical travel. Students on clinical placement or doing an internship as part of their major are responsible for all expenses associated with the clinical/internship. Students are responsible for their own transportation to the clinical agencies/internship sites. They should allow for transportation expenses which could include parking fees, cost of gasoline and cost of air travel/bus/train where necessary. Students are required to pay full fees and tuition during off-campus clinical affiliations. During periods spent full-time in the affiliated areas off-campus, it is the responsibility of the students to find living quarters and to provide their own maintenance.

**Insurance.** It is mandatory that students in the Department of Allied Health Sciences' Professional majors carry comprehensive health insurance, either privately or through the University. Additionally, all students in the professional majors or relevant internships are required to carry specific professional liability insurance under the blanket University policy. Students will automatically be billed for this on the University fee bill.

**Supplemental Academic Standards.** The Department of Allied Health Sciences requires a cumulative grade point average of not less than 2.2 in order to gain admission to the professional majors. Thereafter, students must maintain the following standards of scholastic achievement to continue in the professional major. Students who fail to maintain the minimum grade point averages or minimum course standard in any of these areas are subject to dismissal from the professional program and in some cases the Department of Allied Health Sciences.

1. Students must maintain a minimum semester grade point average of 2.2
2. Students must maintain a minimum cumulative grade point average of 2.2
3. Students must maintain a minimum major grade point average of 2.2
  - a. The Diagnostic Genetic Sciences Major GPA includes all courses offered with the following departmental designations: AH, DGS, MLS, and the following MCB courses: 2210, 2410, and 2610
  - b. The Dietetics Major GPA includes all courses offered with the following departmental designations: AH, DIET, and the following NUSC courses: 2200, 3233, 3234, and 3235
  - c. The Medical Technology Major GPA includes all courses offered with the following departmental designations: AH, MLS, and MT
4. Students must obtain a "C" or better in all courses required for graduation that are in the Department of Allied Health Sciences. Courses vary with program.
5. No student may take a course in the Department of Allied Health Sciences for which another course in the department is a prerequisite unless that student has earned a grade of "C" or better in that prerequisite course.
6. No course in the Department of Allied Health Sciences may be repeated more than once (for a total of two times).

Descriptions and specific course requirements of each of the Professional Majors of Cytotechnology, Diagnostic Genetic Sciences, Dietetics, and Medical Technology are included in individual programs sections listed in alphabetical order within this section of the *Catalog*.

### Allied Health Sciences Post-baccalaureate Certificate Programs

These programs are open only to those students who have completed a Bachelors Degree in an appropriate discipline.

**The Dietetic Internship** is a certificate program administered by the Department of Allied Health Sciences' Dietetics major in collaboration with Hartford Hospital. The internship provides the student with the opportunity to achieve performance requirements for entry-level dietitians through a minimum of 900 hours of supervised practice. The Dietetic Internship is accredited by the American Dietetic Association Commission on Accreditation for Dietetics Education, a specializing accrediting body recognized by the Council on Post Secondary Accreditation and the United States Department of Education. Upon completion of the Dietetic Internship the student is eligible to take the National Registration Examination for Dietetics administered by the Commission on Dietetic Registration of the American Dietetic Association. Students must pass this examination in order to be a Registered Dietitian.

**The Diagnostic Genetic Sciences Certificate Program** is open to individuals with a baccalaureate degree. Students apply to one of two concentrations within this program: Cytogenetics or Molecular Diagnostics. Upon completion, the student receives a certificate from the Department of Allied Health Sciences and is eligible to sit for the specified certification examination.

The **Cytogenetics** concentration is open to individuals with a baccalaureate degree in the medical laboratory sciences or the biological or natural sciences and who meet the course prerequisites for admission to the clinical practicum components. Upon completion, students are eligible to sit for the Certification examination in Cytogenetics offered by the National Credentialing Agency for Laboratory Personnel (NCA).

The **Molecular Diagnostics** concentration is open to individuals with baccalaureate degrees in Cytogenetics, Medical Technology, or the biological or natural sciences, and who meet the specific course prerequisites and academic standards. Upon completion, students are eligible to sit for the Certification examinations in Molecular Genetics offered by the National Credentialing Agency for Laboratory Personnel (NCA) and the American Society of Clinical Pathology (ASCP).

Prospective students are advised to contact the Department of Allied Health Sciences (860-486-2834) for program information and admission requirements.

### Animal Science

This major provides seven options leading to the B.S. degree: Pre-professional (veterinary medicine or graduate training), Biotechnology, Business/Service, Equine Sciences, Food Science, Environmental Health, and Production Management. (For detailed information, please refer to: [www.canr.uconn.edu/ansci](http://www.canr.uconn.edu/ansci))

**Animal Science majors** must pass all courses from Group A, at least one course from Group B, at least two courses from Group C, and one additional course from either Group B or C.

Group A. (All of the following): ANSC 1001, 2111, 3121, 3122, 3194, PVS 2100, BIOL 1107, and CHEM 1122 or 1127Q or both 1124Q and 1125Q

Group B: ANSC 2251, 2271, 3261, 3272, 3273

Group C: ANSC 3313, 3323, 3343, 4341. Either MCB 2000 or 2610 or 3010 can fulfill one of the Group C requirements.

To satisfy the general education requirement for the computer technology competency, students must meet the University's entrance expectations.

To satisfy the general education requirement for information literacy, students must pass ENGL 1010 or 1011 and one of the following courses: ANSC 2111, 3194, 3261, 3314W, 3344W, or 4662W.

To satisfy the general education requirement for writing in the major, students must pass either ANSC 3314W, 3344W, or 4662W.

The Department of Animal Science offers minors in Dairy Management, Food Science, and Therapeutic Horsemanship Education. These are described in the "Minors" section of this *Catalog*.

### Cytotechnology

Students are not being accepted to the Cytotechnology program at this time.

### Diagnostic Genetic Sciences

The Diagnostic Genetic Sciences major has two emphasis areas: Cytogenetics and Molecular Diagnostics. Medical cytogenetic technologists study blood, bone marrow, tissue and amniotic fluid for both normal and abnormal chromosome variations that are associated with malformations and diseases like cancer. Molecular Diagnostic technologists evaluate and investigate DNA and RNA with regards to disease, identity, cancer and forensics. The on-campus course requirements for the two emphasis areas are the same, but the clinical courses differ.

The Cytogenetics emphasis is approved by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS) (8410 W. Bryn Mawr Ave., Suite 670, Chicago, IL 60631-3415, phone: 773-714-8880). Graduates of both emphasis areas are eligible to take the certification examinations administered by the National Credentialing Agency for Laboratory Personnel (NCA) immediately upon graduation and the molecular pathology examination administered by the American Society of Clinical Pathology (ASCP).

### Requirements

The course requirements listed below may also be used to satisfy the University's General Education requirements.

**Mathematics and Science Courses** - CHEM 1124Q and 1125Q or CHEM 1127Q and 1128Q; CHEM 2241 and 2242 or CHEM 2443 and 2444; BIOL 1107; Biology Option: BIOL 1103 or a course in Anatomy and Physiology or BIOL 1108 or MCB 2610 or a Biology course pre-approved by the Diagnostic Genetic Sciences Program Director; MATH 1040Q or 1060Q or above; MCB 2000, 2210, 2410, 2610; STAT 1000Q or 1100Q.

**Professional Courses** - AH 4241, 4243, 4244; MLS 3101, 3121; DGS 3222, 3223, 3225, 4224, 4234W, 4235, 4246; Cytogenetics Emphasis Courses: 4701, 4702, 4703, 4712, 4713, 4750; Molecular Emphasis Courses: 4501, 4502, 4503, 4550; and one of the following: 4510, 4511, 4512, 4513, 4514, 4515

**Writing in the Major** - DGS 4234W

**Computer Technology** - University entry-level competencies have been reviewed and satisfy all program requirements.

**Information Literacy** - Competencies will be met through successful completion of program major courses.

### Dietetics

The Coordinated Program (CP) in Dietetics combines theory in the classroom with supervised practice in clinical dietetics, community nutrition, and food service sites off campus to prepare students to sit for the National Registration Examination for Dietetics and earn the credential of RD. Dietitians assess nutritional needs, plan individualized dietary plans, provide counseling and evaluate nutritional care for individuals and groups.

The Dietetics major is currently granted accreditation by the Commission on Accreditation for Dietetics Education of the American Dietetic Association. Students are eligible to take the National Registration Examination Dietetics administered by the Commission on Dietetic Registration of the American Dietetic Association immediately upon graduation.

### Requirements

The course requirements listed below may also be used to satisfy the University's General Education requirements.

**Mathematics and Science Courses** - CHEM 1124Q and 1125Q or CHEM 1127Q and 1128Q; STAT 1000Q or 1100Q; MCB 2000, 2610; PNB 2264 and 2265; CHEM 2241; NUSC 1165, 2200, 3233, 3234, 3235

**Social Sciences** - SOCI 1001 or 1251 or PSYC 1103

**Professional Courses** - AH 4241, 4242, 4244, DIET 3150, 3155, 3210, 3215, 3230W, 3235, 3250, 3255, 4350, 4360, 4365, 4370, 4415, 4435, 4455, 4470, 4475

**Writing in the Major** - DIET 3230W

**Computer Technology** - University entry-level competencies have been reviewed and satisfy all program requirements.

**Information Literacy** - Competencies will be met through successful completion of program major courses.

### Environmental Science

The major in Environmental Science is based in the physical and biological sciences, but also includes course work in selected areas of the social sciences. The major leads to a Bachelor of Science degree, and may be adopted by students in either the College of Agriculture and Natural Resources or the College of Liberal Arts and Sciences. This curriculum offers a comprehensive approach to the study of environmental problems, including not only a rigorous scientific background, but also detailed analyses of the social and economic implications of environmental issues. The complexity and interdisciplinary nature of environmental science is reflected in the core requirements of the major. These courses, assembled from several different academic departments representing two colleges, provide both breadth and depth, preparing students for careers that deal with environmental issues, and for graduate study in environmental science and related fields.

A. Required courses in Basic Science: ARE 1150; BIOL 1107, BIOL 1108 or 1110; CHEM 1124Q, 1125Q, 1126Q or 1127Q, 1128Q; MATH 1120Q, 1121Q, 1122Q or 1131Q, 1132Q; PHYS 1201Q, 1202Q, 1230 or 1401Q, 1402Q; STAT 1000Q or 1100Q or 3025Q.

B. Required Courses in Introductory Environmental Science: Select any two from GEOG 2300, GEOL 1050, MARN 1002, NRME 1000.

C. Required courses numbered 2000 or above in Environmental Science: AH 3175, EEB 2244 or 2244W, GEOL 3020, MARN 3000, NRME 3145

D. Capstone course: GEOG 3320W

E. General Education competency requirements: Completion of GEOG 3320W will satisfy the writing in the major and information literacy requirements. Completion of BIOL 1108 and EEB 2244 will satisfy the computer literacy requirement.

F. Concentration requirements: All students majoring in Environmental Science must also fulfill the requirements of a concentration in a discipline associated with the program before graduation. Approved concentrations are listed below.

**Environmental Health** - Students must pass the indicated number of courses in the categories below:

Molecular and Cellular Biology: Two of MCB 2211, 2410, 2610\*, 3011, 3212, 4415\* (\* At least one of these laboratory courses must be taken.)

AH 3021

ANSC 4341

Other departments: One of ANSC 4642; DGS 3222; NUSC 4236; PVS 2100, 4300

**Natural Resources** - Students must take NRME 4000W plus one course from each of the following groups:

Note: NRME 3690 Field Study Internship may be substituted for one of the group requirements.

*Air and Water* - NRME 3105, 3125, 3155, 4135, 4165, 4175

*Forest Resources* - NRME 2415, 3475, 4455

*Remote Sensing/GIS* - NRME 3252, 3535, 4535,

*Fish and Wildlife* - NRME 2315, 3335, 3345, 4335

**Resource Economics** - Students must take 15 credits from the following: ARE 3260, 3434, 3436, 3437, 3450, 4099, 4438, 4462, 4464 and up to one additional ARE course numbered 3000-level or above with prior Advisor approval.

**Soil Science** - Students must pass the following: SOIL 2120, 2125, and 3410

Must select 2 courses from: CE 5090; NRME 4165; PLSC 3995, 5420; SOIL 3253

Environmental Science also offers the following concentrations through the College of Liberal Arts and Sciences: Environmental Biology, Environmental Chemistry, Environmental Geography, Environmental Geoscience, Marine Science. For complete requirements, refer to the Environmental Science description in the "College of Liberal Arts and Sciences" section of this *Catalog*:

## Horticulture

The Horticulture major offers courses in the commercial production of vegetables and fruits, propagation and production of woody and herbaceous ornamental plants, and the identification, uses, and maintenance of plants in landscapes and gardens. The Plant Biotechnology option includes micropropagation and the application of molecular methods to genetic improvement of plants. (For detailed information, please refer to: [www.canr.uconn.edu/plsci](http://www.canr.uconn.edu/plsci))

**Horticulture** majors must pass the following courses: BIOL 1110; CHEM 1122 or 1124Q or 1127Q; PLSC 1000, 4210, 4215; SOIL 2120, 2125; and HORT 3640

Two of: HORT 2430, 3410, 3420; EEB 4272; NRME 2415

One of: ARE 1150, 3210, 3215 or ECON 1200, 1201

Two of: PLSC 3810, 3820, 3840; PLSC 3830 or EEB 4253

Two of: HORT 2750, 3540, 3620, 3650, 3660/W, 3670, 3675, or 3760

Horticulture majors must take HORT 3660W or LAND 3230W or TURF 3200W to fulfill their requirement for writing in the major.

Students successfully completing these courses will have met their general education exit requirements for information literacy.

Computer technology competency is satisfied by University entrance expectations.

## Individualized Major

The Individualized Major program allows students to create a major that is not otherwise offered at the University of Connecticut. Students pursuing an Individualized Major must meet all university-level and college-level requirements for graduation and complete at least 36 credits numbered 2000 or above. Requirements for declaring and completing an Individualized Major are listed below:

- Students must be in good academic standing with a minimum GPA of 2.5 to declare an Individualized Major.
- Students must submit a proposed statement of purpose and identify three faculty members who are willing to serve as an advisory committee.
- An Individualized Major has a minimum of 36 credits numbered 2000 or above courses which must:
  - be from two or more departments
  - include at least 18 credits from departments in the College of Agriculture and Natural Resources
  - be approved by the student's advisory committee
  - be taken at the University of Connecticut
  - have a combined Grade Point Average of at least 2.5
  - include no more than 6 credits of Independent Study and Internship
  - not to be taken on Pass/Fail
  - meet all requirements of the "36 Credit Group" of the College of Agriculture and Natural Resources

To satisfy the general education requirement for the computer technology competency, Individualized Majors must meet the University's entrance expectations. They will not have to meet any advanced requirement for computer technology.

The writing in the major and information literacy requirements will be satisfied by meeting these requirements for any of the majors within the College of Agriculture and Natural Resources.

## Landscape Architecture

This major provides instruction in site planning and design, landscape history, landscape architectural graphics and presentation. It includes the use of plants and other features to enrich exterior spaces. Through seminars, studio projects and internships, students learn to apply theory to actual case studies. The program is accredited by the American Society of Landscape Architects. (For detailed information, please refer to: [www.canr.uconn.edu/plsci](http://www.canr.uconn.edu/plsci))

**Landscape Architecture majors** must pass the following courses:

BIOL 1108 or 1110; CHEM 1122 or 1124Q or 1127Q; HORT 3410; SOIL 2120; LAND 2110, 2120, 2210, 2220, 2410, 3130, 3230W, 3310, 3320, 3420, 3430, 4294, 4330, 4340, 4440, and 4450

One of the following: HORT 2430, 2750, 3420, 3760; PLSC 4210; SOIL 3520; EEB 4272; NRME 2415

Accreditation and space restrictions necessitate that the number of students in the Landscape Architecture program be limited. All students choosing the Landscape Architecture major will be evaluated at the end of their third semester, after they have taken the introductory landscape architecture courses, LAND 2110 and 2210. Students will be allowed to continue in the program based upon their cumulative grade point average, graded performance in the two introductory landscape architecture courses, submission of a portfolio of work from these two courses and a letter of intent.

Students who do not meet the requirements may want to consider other majors including Horticulture or Turfgrass and Soil Science. (For detailed information, refer to <http://www.cag.uconn.edu/plsc/plsc/index.html>)

Students successfully completing these courses will have met their general education exit requirements for computer technology and information literacy.

Landscape Architecture majors must take LAND 3230W to fulfill their requirement for writing in the major.

A minor in Landscape Design is described in the "Minors" section.

## Medical Technology

Medical Technologists apply biological and chemical principles to perform, interpret, and correlate laboratory analyses on body fluids and tissues. Medical Technologists are responsible for selecting appropriate methods and implementing quality assurance for tests designed to promote health and prevent, diagnose, and treat diseases.

The Medical Technology major is offered in conjunction with Hartford Hospital which holds accreditation through the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS), 8410 Bryn Mawr Ave., Suite 670, Chicago, IL 60631-3415, phone 773-714-8880). Graduates are eligible for certification examinations administered by the National Credentialing Agency for Medical Laboratory Personnel (NCA) or the American Society of Clinical Pathologists (ASCP) upon graduation.

### Requirements

The course requirements listed below may also be used to satisfy the University's General Education requirements.

**Mathematics and Science Courses** - CHEM 1124Q and 1125Q or CHEM 1127Q and 1128Q; CHEM 2241 and 2242 or CHEM 2443 and 2444; BIOL 1107; Biology Option: BIOL 1103 or a course in Anatomy and Physiology or BIOL 1108 or MCB 2610 or a Biology course pre-approved by the Medical Technology Program Director; MATH 1040Q or 1060Q or above; STAT 1000Q or 1100Q; MCB 2000; Related Science Requirement - MCB 2400 or 2410 or PHYS 1010Q or other 2000-level or above Physics course pre-approved by the Medical Technology Program Director; PVS 4300

**Professional Courses** - AH 4241, 4243, 4244; MLS 3101, 3121; MT 3131, 3333, 3361, 3365, 4094W, 4301, 4302, 4311, 4312, 4321, 4322, 4341, 4342, 4351, 4352, 4366, 4371, 4372

**Writing in the Major** - MT 4094W

**Computer Technology** - University entry-level competencies have been reviewed and satisfy all program requirements.

**Information Literacy** - Competencies will be met through successful completion of program major courses.

### Natural Resources

This major, offered by the Department of Natural Resources Management and Engineering, prepares students for careers related to the management of natural resources. Students develop skills in applying modern technology, concepts and principles dealing with sustainable development, environmental protection and resource conservation. Students select one of the following concentrations: Air and Water Resources, Environmental Conservation, Fisheries and Wildlife Conservation, Forest Resources, or Geomatics. (For detailed information, please refer to: <http://www.canr.uconn.edu/nrme>)

**Competency Requirements:** Students successfully completing the courses listed below will have met their General Education information literacy exit requirements for this major. Students are expected to have gained additional computer technology competency in the fields of geographic information systems (GIS) and Global Positioning System (GPS) data collection and processing. Students will gain these competencies by passing NRME 2000. Students passing NRME 4000W will satisfy the writing competency requirement within the major.

All Natural Resources majors must pass the following core requirements:

NRME 1000, 2000, 2010, 4000W, 4094; BIOL 1107 or 1108 or 1110; CHEM 1122 or 1124Q or 1127Q; MATH 1060 or 1120Q or 1131; SOIL 2120 and 2125 or GEOL 1050; PHYS 1201Q or 1401Q; STAT 1100

In addition to the core requirements, all students must complete one of the following concentrations:

#### Air and Water Resources

All of the following: NRME 3125, 3145, 3218, 4135

Three courses from the following: NRME 3105, 3155, 3205, 3245, 4165, 4175, 4535, 4575, 4665

Two courses from the following: EEB 3247/ENVE 3320; GEOG 3310; GEOL 3020, 3710; MARN 3000, 3003Q

#### Environmental Conservation

ARE 1150 or ECON 1201; ARE 3434 or 3434W or 4438 or 4462; COMM 1100; EEB 2244 or 2244W; EEB 3205; NRME 1235, 3245 and 3690; PHIL 3216 or POLS 3842 or SOCI 3407

Students must also earn an additional 6 credits of NRME courses numbered 2000-level or above.

#### Fisheries and Wildlife Conservation

ARE 3434 or 3434W; EEB 2244 or 2244W; NRME 2315; NRME 3245; and NRME 3335 or 4335

One course from the following:

EEB 3254, 3265, 4200; or 4260 and 4261

Two courses in addition to those selected above from among the following:

EEB 2208, 3254, 3265, 4200, 4247, 4253, or 4260 and 4261; NRME 3105, 3205; NRME/EEB 3305/3307; NRME 2415, 3155, 3315, 3335, 3345, 3355, 3365, 4335, 4455, 4665

### Forest Resources

All of the following: ARE 3434 or 3434W; EEB 4250 or 4253; NRME 2315, 2415, 3125, 3335, 3475, 3690, 4455

### Geomatics

NRME 4535, 4545, and 4575

Two courses from the following: CE 2410; GEOG 2300, 4500, 4510; MATH 1120Q or higher

Four courses from the following: CSE 1100; NRME 2415, 3105, 3125, 3155, 3475, 4175, 4455, 4665, 4689

A minor in Wildlife Conservation is described in the "Minors" section.

### Nutritional Sciences

Students majoring in Nutritional Sciences all receive a Bachelor of Science degree in Nutritional Sciences. The department offers two areas of emphasis: Dietetics and Nutritional Sciences. Each area follows a different curriculum including non-departmental courses, in order to best prepare students for their future goals. Students preparing to become registered dietitians follow the Didactic Program in Dietetics which is accredited by the Commission on Accreditation for Dietetic Education of the American Dietetic Association (ADA), 120 South Riverside Plaza, Suite 2000, Chicago, IL 60606-6695, (800) 877-1600. The Nutritional Sciences curriculum is generally more flexible than the Dietetic curriculum. Students in this option integrate the Nutritional Sciences core requirements with additional courses in the laboratory or behavioral sciences. (For detailed information, please refer to: [www.canr.uconn.edu/nusci](http://www.canr.uconn.edu/nusci))

**Nutritional Sciences majors** must successfully pass the following courses:

NUSC 1165, 2200, 4236, and 4237W

CHEM 1122 or CHEM 1124Q and 1125Q or CHEM 1127Q and 1128Q

CHEM 2241, or 2443 and 2444

PNB 2264 and 2265, or BIOL 1107, 1108 and PNB 2250, or BIOL 1107, 1108 and PVS 2100

MCB 2000 or 3010

In addition to the courses listed above, a minimum of 4 credits, numbered 2000-level or above, must be earned from courses in the Department of Nutritional Sciences. Credits earned in field experiences and independent studies cannot be used to meet this 4-credit requirement. Specific course recommendations are listed in the *Undergraduate Bachelor Degree Program* brochure in the department.

Students must take either NUSC 4237W or 4296W to fulfill their writing in the major requirement. The advanced information literacy requirement is fulfilled with NUSC 4237W or both NUSC 2245 and NUSC 4266. There are no advanced requirements for computer technology.

A minor in Nutrition for Exercise and Sport and a minor in Sport Nutrition are described in the "Minors" section.

### Pathobiology

Students majoring in Pathobiology focus on animal health and diseases and their relationship to people and the environment. Students can prepare to enter veterinary medical schools or medical schools. Pathobiology majors also pursue careers in biotechnology, biomedical sciences, para-veterinary medicine, and many diverse laboratory and research positions in health fields and agriculture and natural resources. (For detailed information, please refer to: [www.canr.uconn.edu/patho](http://www.canr.uconn.edu/patho))

**Pathobiology majors** must pass the following courses:

PVS 1000, 2100, 3100 and 4300

One course in Microbiology: MCB 2610

One course in Biochemistry: MCB 2000 or MCB 3010

One course in Genetics: MCB 2410, 2413, or ANSC 3121

One course in Nutrition, Immunology, or Cell Biology: ANSC 2111, NUSC 1165, MCB 2210, 3212, or MLS 3121W

One of the following courses: PVS 2301, 3201 or 3201W, 3341, 4351

Students must pass either PVS 3094W or 3201W to fulfill their writing in the major requirement. The advanced information literacy requirement is fulfilled by passing PVS 3094W or 3201W. There are no advanced requirements for computer technology.

### Resource Economics

This major in the Department of Agricultural and Resource Economics applies analytical and decision-making skills to problems of production and distribution of food products and the management of natural resources and the environment. Students may select the Agribusiness Management or Environmental Economics and Policy options. These prepare students for a wide variety of careers in the business and government sectors, or to pursue graduate studies. (For detailed information, please refer to: [www.are.uconn.edu/](http://www.are.uconn.edu/))

Students must take either ARE 3260W or ARE 3434W to fulfill their writing in the major requirement. The advanced information literacy requirement is fulfilled with either ARE 3260W or ARE 3434W. There are no advanced requirements for computer technology.

Minors in Agribusiness Management, Aquaculture Business Management, Environmental Economics and Policy, and Equine Business Management are described in the “Minors” section.

### Turfgrass and Soil Science

This major offers two areas of concentration. Turfgrass Science includes the management of golf courses, athletic fields, roadsides, erosion control sites, lawns and other areas where grasses are grown. The Soil Science option prepares students for professional certification. Courses focus on soil identification and suitability for different uses. (For detailed information, please refer to: [www.canr.uconn.edu/plsci](http://www.canr.uconn.edu/plsci))

**Turfgrass and Soil Science majors** must pass the following courses: BIOL 1110; CHEM 1122, 1124Q or 1127Q; PLSC 1000, 4210, and 4215; SOIL 2120 and 2125

Students must earn a minimum of 9 additional credits in courses from the subject areas of Biology, Chemistry, Computer Science, Geology and Geophysics, Mathematics, Physics, or Statistics.

For the Turfgrass option, students must pass: TURF 1100, 3200/W, 3800; SOIL 3520, 3620; PLSC 3990

6 credits from: PLSC 3810, 3820, 3830, 3840

6 credits from: HORT 2430, 2750, 3410, 3420, 3640, 3650, 3660/W, 3760

Turfgrass and Soil Science majors must pass TURF 3200W or HORT 3660W to fulfill their requirement for writing in the major. Alternatively, Turfgrass and Soil Science majors with a minor in Landscape Design may use LAND 3230W to fulfill their requirement for writing in the major.

Students successfully completing these courses will have met their general education exit requirements for information literacy.

Computer technology competency is satisfied by University entrance expectations.

**Double Major Option.** Students may elect to complete requirements for two major fields of study offered by the College of Agriculture and Natural Resources. A student selecting this option must submit a Double Major Declaration indicating primary and secondary majors. This declaration must include a tentative plan of study and requires approval by the advisors and department heads for both respective major areas of study and the Associate Dean. The approved declaration will be submitted to the Degree Auditor. The student’s final plan of study will include a double major attachment to verify that the requirements have been met for both the primary and secondary majors. The transcript will identify both majors.

**Primary Major.** Students must meet all requirements as listed under “Requirements for a Major” (36 credit group) and all individual major requirements as listed above.

**Secondary Major.** Students must meet all individual major requirements as listed above and successfully complete additional course work numbered 2000 or above *not* used as part of the 36 credit group for the primary major. This group of courses must:

1. total at least 24 credits
2. be numbered 2000 or above
3. be approved by student’s advisor and department head
4. be taken at the University of Connecticut
5. include at least 15 credits of College of Agriculture and Natural Resources courses

6. average at least a 2.0 Grade Point Average
7. not include more than six credits of Independent Study and Internship
8. not be taken on Pass/Fail
9. not include more than 6 credits of S/U coursework

**Minors:** The College of Agriculture and Natural Resources offers minors in Agribusiness Management, Aquaculture, Aquaculture Business Management, Dairy Management, Equine Business Management, Environmental Economics and Policy, Food Science, Landscape Design, Nutrition for Exercise and Sport, Sport Nutrition, Therapeutic Horsemanship Education, and Wildlife Conservation. All of these are described in the “Minors” section of this *Catalog*.

**Pre-Physical Therapy, Pre-Medical, and other Health Related Pre-professional Programs.** Students preparing for professional careers in physical therapy, human medicine, dentistry, physician’s assistant and other post-baccalaureate health programs may major in Allied Health Sciences, Nutritional Sciences, or Pathobiology, as well as many other science-based majors throughout the University. Pre-professional programs in the College of Agriculture and Natural Resources are offered as structured options within majors, rather than as official, stand-alone majors. This allows students to consider multiple career goals without compromising their eligibility for admission into competitive professional programs. Physical Therapy at the University of Connecticut is offered at the graduate level. (Consult the Graduate Catalog for more information regarding admission requirements for the University of Connecticut’s Doctorate in Physical Therapy Program.)

**Pre-Veterinary Medicine.** Students aspiring to become veterinarians generally major in either Animal Science or Pathobiology at the University of Connecticut. Animal Science includes the study of animal genetics, physiology, nutrition, medicine, products, and behavior. Pathobiology is the study of normal and abnormal biological processes in animals, including courses in anatomy, physiology, diseases, histology, virology, and microbiology. In both majors, the structured curriculum for pre-veterinary students includes courses required for veterinary college admission. Knowledgeable advisors, professional experience, networking opportunities, and – of course – students’ success in rigorous course requirements have resulted in a great track record for UConn graduates being admitted to veterinary schools and colleges.

**Honors Programs.** University honors programs are available to qualified students in the College. Please refer to the section of this *Catalog* designated “Honors Programs” for further information.

**Transfer Students.** Transfer students can use transfer credits to meet General Education requirements and 2000-level course requirements in a specific major. Transfer students may apply a maximum of six credits of 2000-level work toward the 36 credit requirement for a major. These credits must be identified as courses comparable to specific University of Connecticut courses and cannot include internships, special topics, or non-specific discipline credits. Transfer students must complete at least 30 credits of 2000-level course work at the University of Connecticut, including at least 15 credits in College of Agriculture and Natural Resources courses.

**Exemptions and Substitutions.** Students requesting an exemption from any University and/or College requirement, or a substitution for a course or requirement, should consult their advisors. Such exemptions or substitutions must be approved by the Department Head and the Associate Dean of the College and may also require approval from the Provost’s Office.

**Field Trips and Transportation Costs.** Many courses require off-campus field trips. Students should budget money for participation.

**Graduate Programs.** Most departments provide graduate programs for students interested in greater specialization beyond the baccalaureate. The study may lead to a Master of Science or Doctor of Philosophy degree. Students planning for a graduate program should secure a comprehensive background in the basic sciences. For further information see the announcement of the Graduate School.