

A minor in mathematics may be obtained by completing a minimum of 15 credit hours of course work in mathematics beyond any mathematics courses required by a student's major. The program of a student who minors in mathematics must in any case include at least 2 semesters of Calculus.

NATURAL RESOURCES AND BIOSYSTEMS MANAGEMENT

Faculty:

Barbara D. Muse, Chairperson
 Richard Cowhig
 Steven S. DeBroux
 Howard Eyre
 Lawrence D. Hepner, Jr.
 Douglas T. Linde
 Mingwang Liu
 John D. Martin
 Eve S. Minson
 Ronald R. Muse

The impact of humans on the planet is becoming increasingly evident. Now as never before, we are using the resources of our planet to provide more food, more clean water, more energy, and aesthetically pleasing living environments for an ever increasing population. Students within this department acquire the knowledge and skills that will enable them to be responsible productive citizens of the earth. Biosystems Management deals with the interaction of humans and natural systems to develop functional connections for food production, water use, waste management, fuel generation, aesthetics and other uses of natural resources to meet human needs in a sustainable fashion. Within Natural Resources and Biosystems Management, there are three degree areas of study: Agronomy and Environmental Science; Horticulture; and Ornamental Horticulture and Environmental Design. Together the three degree areas offer a total of nine different majors.

Agronomy & Environmental Science — page 39

- Environmental Science
- Crop Science
- Turf Management

Horticulture — page 82

- Commercial Crop Production & Marketing/Plant Health Management
- Plant Science & Biotechnology
- Hydroponic Crop Science

Ornamental Horticulture & Environmental Design — page 85

- Environmental Design
- Floriculture & Nursery Production & Marketing
- Landscape Contracting and Management

ORNAMENTAL HORTICULTURE AND ENVIRONMENTAL DESIGN (OH)

Faculty:

Barbara D. Muse, Chairperson
 Mingwang Liu, Assistant Chairperson
 Richard Cowhig
 Howard Eyre
 John D. Martin
 Eve S. Minson

The Department of Ornamental Horticulture and Environmental Design is future oriented. Our programs reach far beyond aesthetics to address the issues which will positively affect our tomorrows and help shape a healthier, more beautiful and livable world. The curriculum reflects the career diversity, importance and ecological foundation of our programs, and has been designed to prepare people for a profession and for life. Programs of study are rich in the basic sciences and mathematics, liberal arts, and the plant and environmental sciences. Course work within the major starts in the freshman year so that professional development can begin immediately.

The curriculum is designed to allow each student to develop strength and depth in a career area specialty: Floriculture and Nursery Production and Marketing, Landscape Contracting and Management, or Environmental Design (specialization descriptions and requirements are outlined on the following pages). Yet, all students receive a skill overview of the entire field. Ample curriculum flexibility is provided so that students can elect additional science, professional or business courses. Students can minor in any major offered on campus, and special minors are also offered in Landscape Management and Plant Biotechnology. This flexibility and interdisciplinary approach helps a student develop a background which best fits his or her personal career objectives.

The College operates approximately 30,000 square feet of greenhouses including the ultra-modern, computerized Arthur Poley Greenhouse Complex completed in 1998. It also operates a field/container landscape nursery operation, lath houses, and a propagation facility which are used extensively in teaching.

Programs

A modern teaching complex houses a laboratory, environmental design studio, design jury room, student florist shop, and faculty offices. These facilities are equipped to reflect state-of-the-art standards and are wired for network, internet and telecommunications access. The sixty-acre main campus with its landscape plantings, specimens and gardens is an arboretum and is used extensively as an outdoor laboratory. The Henry Schmieder Arboretum is a member of the American Public Gardens Association and The Gardens Collaborative. The campus is located close to many large landscape nurseries, greenhouse production facilities, retail and wholesale florists, arboreta and display gardens. Field trips to Longwood Gardens, Morris Arboretum, Princeton Nurseries, and commercial greenhouses, to mention only a few, are taken to enrich classroom teaching.

The Department of Ornamental Horticulture and Environmental Design works closely with industry leaders and organizations to continually fine-tune its programs to address the future needs of students and industry. To help ensure this, an industry advisory group, consisting of individuals representing the broad spectrum of Ornamental Horticulture and Environmental Design, meets periodically to review our programs and to suggest improvement.

An Ornamental Horticulture degree opens many career opportunities for the graduate. Each is a career with a future helping to shape a better tomorrow. Our unique employment program, which enables students to actually experience their professions, combined with the DVC hands-on approach, gives our graduates an employment edge. Graduates in Ornamental Horticulture have found positions as: Landscapers, Landscape Designers, Garden Center Managers, Assistant Growers, Floral Designers, Floral Shop Managers, and Greenhouse Managers, to name but a few.

A Bachelor of Science degree in Ornamental Horticulture also paves the way to graduate school and continued education leading to careers in landscape architecture, research, biotechnology, plant breeding, high school and college teaching, and many areas of plant science.

The total number of credits required for graduation with a degree in Ornamental Horticulture and Environmental Design is 128 plus 4 credits earned for successful completion of the Employment Program.

RECOMMENDED COURSE SEQUENCE

Environmental Design

The Environmental Design program was developed for students planning careers in landscape design, design/build, and other design-oriented professions, all with an ecological emphasis. This specialization can serve as a pre-MLA (Master of Landscape Architecture) program. The MLA is the preferred degree for landscape architecture. To receive transfer credit for design studios, a portfolio must be evaluated.

Ornamental Horticulture/Environmental Design

FRESHMAN YEAR

First Semester

Course No.	Course Title	Credits
BY 1116	Biological Science I	3
CH 1001	Chemistry Fundamentals	3
CH 1001L	Chemistry Fundamentals Lab	1
EN 1101	English I.....	3
LA 1020	Skills for College Success	1
MP 1102	College Algebra or	
MP 1203	Elementary Functions	3
OH 2220	Woody Plant Identification I	2
PE 1109	Physical Education I	1
Total		17

Second Semester

AE 2004	Soils.....	3
EN 1201	English II.....	3
MP 1203	Elementary Functions or	
MP 1204	Calculus I.....	3-4
OH 2118	Woody Plant Identification II	2
OH 2014	Floriculture Techniques	3
PE 1209	Physical Education II	1
Total		15-16

Employment Program

OH 2370	Employment Program.....	1-2
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SOPHOMORE YEAR

First Semester

Course No.	Course Title	Credits
AE 2017	Topographical Surveying.....	3
HT 2101	Botany of Vascular Plants.....	3
IT 1011	Information Technology Concepts ...	1.5
IT 1012	Computer Applications	1.5
OH 2015	Landscape Techniques.....	3
OH 3117	Herbaceous Plant Materials I	2
OH 3213	Landscape Graphics.....	2
Total		16

Second Semester

AE 3220	Watershed Management	3
BY 2235	Plant Communities	3
EN 2028	Introduction to Literature	3
IT 3220	Computer-Aided Design	3
OH 3205	Site Analysis & the Design Process	3
OH 3217	Herbaceous Plant Materials II	2
Total	17

Employment Program

OH 2370	Employment Program.....	1-2
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JUNIOR YEAR

First Semester

Course No.	Course Title	Credits
LA 2005	Speech.....	3
OH 3130	Major Native Landscapes.....	3
OH 3224	Landscape Construction.....	3
	Humanities Area.....	3
	Electives	4
Total	16

Second Semester

OH 3216	History of Landscape Architecture.....	2
OH 4215	The Built Environment	3
	Humanities Area.....	3
	Electives	6
Total	14

Employment Program

OH 2370	Employment Program.....	1-2
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SENIOR YEAR

First Semester

Course No.	Course Title	Credits
LA 1060	Introduction to Fine Arts	3
LA 4037	Non-Western Societies	3
OH 4008	Ornamental Horticulture Seminar.....	1
OH 4034	Sustainable Design and Model Making.....	3
OH 4125	Ecological Landscape Management & Restoration	3
	Elective.....	3
Total	16

Second Semester

AE 4015	Regional Land Use Planning	3
BA 2008	Macroeconomics	3
OH 4230	Landscape Contracting and Bidding.....	3
	Social Sciences Area	3
	Elective.....	1
Total	13

Social Sciences Area: select one of the following:

LA 2012	Introduction to Sociology.....	3
LA 2036	Introduction to Psychology	3
LA 4203	Social Psychology and Human Interaction	3

Humanities Area: select two courses from the following:

LA 2040	Modern History of Western Societies ...	3
LA 2042	Introduction to Philosophy	3
LA 2138	History of Western Civilization I.....	3
LA 3032	American History and Government since 1877.....	3
LA 4127	United States Foreign Policy	3

**Floriculture and Nursery
Production and Marketing**

The Floriculture and Nursery Production and Marketing program has been developed for students whose career goals include one or more of the following: floral or nursery marketing, garden center management, floral design and decorating, greenhouse and/or nursery management and production, interiorscaping, mass merchandising of ornamental products, and all areas of floral and nursery business. This is a genuine seed to sale program.

Ornamental Horticulture/Floriculture

FRESHMAN YEAR

First Semester

Course No.	Course Title	Credits
BY 1116	Biological Science I	3
CH 1103	General Chemistry I.....	3
CH 1103L	General Chemistry I Lab.....	1
EN 1101	English I.....	3
LA 1020	Skills for College Success	1
MP 1102	College Algebra or	
MP 1203	Elementary Functions	3
OH 2014	Floriculture Techniques or	
OH 2015	Landscape Techniques.....	3
PE 1109	Physical Education I	1
Total	18

Second Semester

BY 1217	Biological Science II	3
CH 1203	General Chemistry II.....	3
CH 1203L	General Chemistry II Lab	1
EN 1201	English II.....	3
MP 1203	Elementary Functions or	
MP 1204	Calculus I.....	3-4
OH 2014	Floriculture Techniques or	
OH 2015	Landscape Techniques.....	3
PE 1209	Physical Education II	1
Total	17-18

Programs

Employment Program

OH 2370 Employment Program.....1-2

SOPHOMORE YEAR

First Semester

Course No.	Course Title	Credits
BA 2008	Macroeconomics	3
EN 2028	Introduction to Literature	3
HT 2101	Botany of Vascular Plants.....	3
OH 2220	Woody Plant Identification I	2
	Humanities Area.....	3
	Elective.....	2
Total	16

Second Semester

AE 2004	Soils.....	3
BY 2003	Genetics.....	3
IT 1011	Information Technology Concepts	1.5
IT 1012	Computer Applications.....	1.5
LA 2005	Speech.....	3
OH 2118	Woody Plant Identification II.....	2
	Elective.....	1
Total	15

Employment Program

OH 2370 Employment Program.....1-2

JUNIOR YEAR

First Semester

Course No.	Course Title	Credits
HT 2005	Plant Physiology.....	3
HT 4106	Marketing Horticultural Products.....	2
OH 3106	Floral Crop Production I	2
OH 3117	Herbaceous Plant Materials I	2
	Humanities Area.....	3
	Electives	4
Total	16

Second Semester

BY 3007	Entomology	3
OH 3005	Plant Propagation.....	3
OH 3208	Floral Crop Production II	2
OH 3217	Herbaceous Plant Materials II	2
OH 3232	Introductory Floral Design or	
OH 4206	Nursery Management.....	3
	Elective.....	3
Total	16

Employment Program

OH 2370 Employment Program.....1-2

SENIOR YEAR

First Semester

Course No.	Course Title	Credits
HT 4005	Plant Pathology	3
LA 4037	Non-Western Societies	3
	Electives	9
Total	15

Second Semester

OH 4008	Seminar	1
LA 1060	Introduction to Fine Arts.....	3
	Social Sciences Area	3
	Electives	8
Total	15

Landscape Contracting and Management

This program is intended for students desiring a career in the allied nursery professions such as nursery management, production or marketing, landscape contracting construction and design/build, garden center management, landscape management (golf courses, parks, residential, etc.), arboriculture, urban forestry, landscape/nursery sales, etc.

Ornamental Horticulture/Landscaping Contracting and Management

FRESHMAN YEAR

First Semester

Course No.	Course Title	Credits
BY 1116	Biological Science I	3
CH 1103	General Chemistry I.....	3
CH 1103L	General Chemistry I Lab.....	1
LA 1020	Skills for College Success	1
EN 1101	English I.....	3
MP 1102	College Algebra or	
MP 1203	Elementary Functions	3
OH 2014	Floriculture Techniques or	
OH 2015	Landscape Techniques.....	3
PE 1109	Physical Education I	1
Total	18

Second Semester

CH 1203	General Chemistry II.....	3
CH 1203L	General Chemistry II Lab	1
EN 1201	English II.....	3
MP 1203	Elementary Functions or	
MP 1204	Calculus I.....	3-4
OH 2014	Floriculture Techniques or	
OH 2015	Landscape Techniques.....	3
PE 1209	Physical Education II	1
Total	14-15

Employment Program

OH 2370 Employment Program.....1-2

SOPHOMORE YEAR

First Semester

Course No.	Course Title	Credits
AE 2004	Soils.....	3
BA 2008	Macroeconomics.....	3
BY 2003	Genetics.....	3
HT 2101	Botany of Vascular Plants.....	3
OH 2220	Woody Plant Identification I.....	2
	Elective.....	1
Total		15

Second Semester

AE 2017	Topographical Surveying and GIS.....	3
EN 2028	Introduction to Literature.....	3
IT 1011	Information Technology Concepts.....	1.5
IT 1012	Computer Applications.....	1.5
LA 2005	Speech.....	3
OH 2118	Woody Plant Identification II.....	2
	Elective.....	2
Total		16

Employment Program

OH 2370	Employment Program.....	1-2
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JUNIOR YEAR

First Semester

Course No.	Course Title	Credits
HT 2005	Plant Physiology.....	3
OH 3005	Plant Propagation.....	3
OH 3117	Herbaceous Plant Materials I.....	2
	Humanities Area.....	3
	Electives.....	5
Total		16

Second Semester

BY 2007	Entomology.....	3
OH 3205	Site Analysis & the Design Process.....	3
OH 3217	Herbaceous Plant Materials II.....	2
	Humanities Area.....	3
	Electives.....	4
Total		15

Employment Program

OH 2370	Employment Program.....	1-2
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SENIOR YEAR

First Semester

Course No.	Course Title	Credits
HT 4005	Plant Pathology.....	3
LA 4037	Non-Western Societies.....	3
OH 3124	Landscape Construction.....	3
	Social Science Area.....	3
	Elective.....	3
Total		15

Second Semester

LA 1060	Introduction to Fine Arts.....	3
OH 4008	Seminar.....	1
OH 4230	Landscape Contracting & Bidding.....	3
	Electives.....	8
Total		15

Social Sciences Area: select one of the following:

LA 2012	Introduction to Sociology.....	3
LA 2036	Introduction to Psychology.....	3
LA 4203	Social Psychology and Human Interaction.....	3

Humanities Area: select two courses from the following:

LA 2040	Modern History of Western Societies.....	3
LA 2042	Introduction to Philosophy.....	3
LA 2138	History of Western Civilization I.....	3
LA 3032	American History and Government since 1877.....	3
LA 4127	United States Foreign Policy.....	3

Restricted Elective Courses

Students in the Floriculture and Nursery Production and Marketing specialization must take at least 12 credits from the following courses labeled with an "F."

Students in the Landscaping Contracting and Management specialization must take at least 9 credits from the following courses labeled with an "L."

Course No.	Course Title	Credits
AE 3106	Turf and Grounds Machinery Mgt. (L/F).....	3
AE 3108	Irrigation Technology (L).....	3
AE 3114	Intro. to Turf Management (L/F).....	3
AE 3202	Plant Breeding (L/F).....	3
AE 3230	Turf Cultural Systems (L/F).....	3
AE 4116	Weed Science (L/F).....	4
BY 2235	Plant Communities (L/F).....	3
IT 3220	Computer Aided Design (L/F).....	3
HT 2240	Organic Crop Science (L/F).....	3
HT 3025	Plant Cell Tissue Culture (L/F)***.....	2
HT 3230	Hydroponics (L/F)****.....	3
HT 3240	Integrated Pest Mgt. (L/F).....	3
HT 4132	Principles of Plant Protection (L/F).....	3
HT 4225	Plant Disease Diagnosis (L/F).....	3
OH 3020	Basic Design (L/F).....	1
OH 3109	Interior Plant Identification, Culture and Use (L/F).....	2
OH 3130	Major Native Landscapes (L).....	3

Programs

OH 3205	Site Analysis and the Design Process (F)	3
OH 3210	Interior Plantscaping (L/F)**	2
OH 3213	Landscape Graphics (L/F)	2
OH 3216	History of Landscape Architecture (L).....	2
OH 3225	Arboriculture (L)	3
OH 3240	Advanced Woody Plant Materials (L/F)**	2
OH 4125	Ecological Landscape Mgt. and Restoration (L/F).....	3
OH 4145	Advanced Floral Design (F)*.....	2
OH 4206	Nursery Management (L/F)****	3
OH 4209	Greenhouse Management (L/F).....	3
OH 4215	The Built Environment (L)	3

* Offered in Fall Semester of odd numbered years.

** Offered in Fall Semester of even numbered years.

*** Offered in Spring Semester of even numbered years.

**** Offered in Spring Semester of odd numbered years.

Ecological Landscape Management Minor

In response to the increasing number of career opportunities in this field as well as student interest in managing arboreta, botanical gardens, golf courses, commercial campuses, etc., the Department of Ornamental Horticulture & Environmental Design offers an elective minor in Landscape Management. The minor includes:

Course No.	Course Title	Credits
AE 2209	Soil Fertility***	3
AE 3106	Turf and Grounds Machinery Management	3
AE 4114	Turf Management***	3
BA 3028	Supervision and Management.....	3
HT 4132	Principles of Plant Protection.....	3
OH 3225**	Arboriculture*	3
OH 4125	Ecological Landscape Mgt. and Restoration	3
Total.....		21**

* Requires prerequisite.

** Six credits of these minor requirements are to be taken to satisfy restricted elective requirements (see elsewhere). The remaining 15 credits of course work will fit under the department's free elective requirement.

Biotechnology Minor (for Plant Science Majors)

Students majoring in the Plant Science area (Agronomy, Horticulture or Ornamental Horticulture) may enroll in an interdisciplinary minor including the following recommended courses. Substitutions may be arranged in advance with permission of the Department Chairperson.

Course No.	Course Title	Credits
BT 3000	Introduction to Biotechnology***	3
BY 4155	Molecular Biology***	4
CH 2203	Biochemistry***	3
CH 2203L	Biochemistry Lab.....	1
MP 3231	Statistics for Science***	3
OH 3000	Selected Topics	1
Total		15

* Requires prerequisite.

Physical Education Department

The Physical Education Department offers courses that provide activity-oriented subjects that are instrumental in the development of sound physical health habits each student may use to attain and maintain physical conditioning. Other subject areas include those related to training for the prevention and emergency treatment of sudden and life-threatening illnesses.

Students who are on the official roster for a team sport may use the team sport to satisfy the Physical Education graduation requirement. Students must register for PE 1109 (fall) or PE 1209 (spring) and go to the first class meeting in order for the team sport to satisfy the requirement. If the student leaves the team, he/she must resume attending the weekly PE classes.

Students may take PE 1109 or PE 1209 a maximum of four times, for a total of 4 credits. 2 credits will be used to satisfy the Physical Education graduation requirement. An additional 2 credits may be counted as elective credit.

Psychology Minor

Any student may minor in Psychology by completing 15 credit hours of courses from the following list:

Course No.	Course Title	Credits
*LA 2036	Introduction to Psychology	3
LA 2230/ED 2230	Educational Psychology.....	3
LA 3034	Adolescent Psychology	3
LA 4014	Abnormal Psychology.....	3
LA 4203	Social Psychology and Human Interaction	3
MP 3231	Statistics for Science**	3

* Students who minor in Psychology must take Introduction to Sociology to satisfy the Social Science Core Curriculum requirement.

** Students who have already taken Statistics for Science (formerly Statistics for Research) for their major field requirements and passed with a "C" or better may take any additional Psychology course for the remaining 15 credits required or can substitute CJ 2225 Juvenile Delinquency, Business Statistics I and/or II and Statistics for Business may not be substituted for Statistics for Science.