258. American Literature: 1800 to the Civil War (4)  
Seminar—3 hours; conference—1 hour. Studies in American literature from 1800 to 1914. Course materials to be selected by the instructor. Preparation and evaluation of research papers. May be repeated for credit when a different topic is studied. —III.

256. Early American Literature (4)  
Seminar—3 hours; conference—1 hour. Studies in Early American literature. Course materials to be selected by the instructor. Preparation and evaluation of research papers. May be repeated for credit when a different topic is studied.

250. Romantic Literature (4)  
Seminar—3 hours; conference—1 hour. Studies in nineteenth-century literature. Course materials to be selected by the instructor. Preparation and evaluation of research papers. May be repeated for credit when a different topic is studied. —II.

248. Eighteenth-Century Literature (4)  
Seminar—3 hours; conference—1 hour. Studies in eighteenth-century literature. Course materials to be selected by the instructor. Preparation and evaluation of research papers. May be repeated for credit when a different topic is studied. —I.

246. Seventeenth-Century Literature (4)  
Seminar—3 hours; conference—1 hour. Studies in seventeenth-century literature. Course materials to be selected by the instructor. Preparation and evaluation of research papers. May be repeated for credit when a different topic is studied. —I.

242. Sixteenth-Century Literature (4)  
Seminar—3 hours; conference—1 hour. Studies in sixteenth-century literature. Course materials to be selected by the instructor. Preparation and evaluation of research papers. May be repeated for credit when a different topic is studied. —II.

238. Special Topics in Literary Theory (4)  
Seminar—3 hours; term paper. Prerequisite: course 237 or the equivalent. Advanced topics in literary theory and criticism. Preparation and evaluation of research papers. May be repeated for credit when topic and/or reading list differs. Offered in alternate years. —III.

240. Medieval Literature (4)  
Seminar—3 hours; conference—1 hour. Studies of medieval literature and materials to be selected by the instructor. Preparation and evaluation of research papers. May be repeated for credit when a different topic is studied. —II.

242. Sixteenth-Century Literature (4)  
Seminar—3 hours; conference—1 hour. Studies in sixteenth-century literature. Course materials to be selected by the instructor. Preparation and evaluation of research papers. May be repeated for credit when a different topic is studied. —II.

246. Seventeenth-Century Literature (4)  
Seminar—3 hours; conference—1 hour. Studies in seventeenth-century literature. Course materials to be selected by the instructor. Preparation and evaluation of research papers. May be repeated for credit when a different topic is studied. —I.

248. Eighteenth-Century Literature (4)  
Seminar—3 hours; conference—1 hour. Studies in eighteenth-century literature. Course materials to be selected by the instructor. Preparation and evaluation of research papers. May be repeated for credit when a different topic is studied. —II.

250. Romantic Literature (4)  
Seminar—3 hours; conference—1 hour. Studies in nineteenth-century literature. Course materials to be selected by the instructor. Preparation and evaluation of research papers. May be repeated for credit when a different topic is studied. —II.

256. Early American Literature (4)  
Seminar—3 hours; conference—1 hour. Studies in Early American literature. Course materials to be selected by the instructor. Preparation and evaluation of research papers. May be repeated for credit when a different topic is studied.

258. American Literature: 1800 to the Civil War (4)  
Seminar—3 hours; conference—1 hour. Studies in American literature from 1800 to 1914. Course materials to be selected by the instructor. Preparation and evaluation of research papers. May be repeated for credit when a different topic is studied. —II.

262. American Literature after 1914 (4)  
Seminar—3 hours; conference—1 hour. Studies in American literature after 1914. Course materials to be selected by the instructor. Preparation and evaluation of research papers. May be repeated for credit when a different topic is studied. —II.

264. Studies in Modern British and American Literature (4)  
Seminar—3 hours; conference—1 hour. Studies in modern British and American literature. Course materials to be selected by the instructor. Preparation and evaluation of research papers. May be repeated for credit when a different topic is studied.

270. Studies in Contemporary World Literature (4)  
Seminar—3 hours; conference—1 hour. Prerequisite: graduate standing, consent of instructor, with preference given to those enrolled in the masters program in Creative Writing. Emerging global, international or transnational techniques, theories, and individual works of contemporary world prose or poetry. Discussion, seminar reports, research papers. May be repeated for credit when topic differs. —II, III.

285. Literature by Women (4)  
Seminar—3 hours; conference—1 hour. Studies in literature by women and the theoretical approaches to literature by women. Course materials to be selected by the instructor. Preparation and evaluation of research papers. May be repeated for credit when a different topic is studied. —I.

288. Prospectus Workshop (2)  
Conference—2 hours. Must have passed Departmental Preliminary Exam. Training in writing the dissertation prospectus. Participation in group discussions of preparatory assignments and final proposal. (S/U grading only.)—III.

289. Article Writing Workshop (2)  
Conference—2 hours. Prerequisite: consent of instructor. Preparation of articles to be submitted to scholarly journals. Participation in group discussions of preparatory assignments and final proposal. (S/U grading only.)—III.

290N. Seminar in Creative Writing of Non-Fiction (4)  
Seminar—3 hours, term paper. Prerequisite: consent of instructor, graduate standing, preference given to those enrolled in the master’s program in Creative Writing. The writing of literary non-fiction, with emphasis on autobiography, biography, memoir, the occasional or personal essay, or other non-fiction prose narratives. May be repeated for credit. —II, III. (I, II, III.)

290P. Seminar in Creative Writing of Poetry (4)  
Seminar—3 hours, 1 additional hour of writing. Prerequisite: consent of instructor; graduate standing, preference given to those enrolled in the master’s program in Creative Writing. The writing of poetry. Preparation of written materials and individual student conferences. May be repeated for credit. —I, II, III. (I, II, III.)

293. Teaching Literature and Composition (2)  
Discussion—2 hours. Prerequisite: graduate standing; appointment as Teaching Assistant in the English Department. Designed for new instructors of English 3 or the equivalent courses; discussion of problems related to teaching literature and composition to lower division students. (S/U grading only.)—II, III.

296. Teaching Assistant Training Practicum (1-4)  
Prerequisite: graduate standing. May be repeated for credit. (S/U grading only.)—II, III, (I, II, III.)

299D. Special Study for the Doctoral Dissertation (1-12)  
(S/U grading only.)

Professional

391. Teaching Creative Writing (2)  
Discussion—2 hours. Prerequisite: graduate standing; appointment as Teaching Assistant in the English Department. Designed for new instructors of English 3 or 5P; discussion of ways to facilitate creative writing workshops and to respond to student manuscripts. (S/U grading only.)

393. Teaching Literature and Composition (2)  
Discussion—2 hours. Prerequisite: graduate standing; appointment as Teaching Assistant in the English Department. Designed for new instructors of English 3 or the equivalent courses; discussion of problems related to teaching literature and composition to lower division students. (S/U grading only.)—II, III.

Entomology and Nematology

Formerly the departments of Entomology and Nematology

(Professor Emeritus)

Bruce D. Hammock, Ph.D., Distinguished Professor  
Academic Senate Distinguished Teaching Award

Brian R. Johnson, Ph.D., Assistant Professor  
Richard Karban, Ph.D., Professor  
Lynn S. Kimsey, Ph.D., Professor

Michael P. Parrella, Ph.D., Professor

(Professor Emeritus)

Peter S. Cranston, Ph.D., Professor

(Professor Emeritus)

Michael D. Werker, Ph.D., Professor

(Professor Emeritus)

Joseph B. Phillips, Ph.D., Professor

(Professor Emeritus)

James L. Wilson, Ph.D., Professor

(Professor Emeritus)

James R. Carey, Ph.D., Professor  
Edward P. Caswell-Chen, Ph.D., Professor  
Joship Chiu, Ph.D., Assistant Professor  
Howard Ferris, Ph.D., Professor  
Bruce D. Hammock, Ph.D., Distinguished Professor  
Academic Senate Distinguished Teaching Award

Thomas W. Scott, Ph.D., Professor  
Diane E. Ullman, Ph.D., Professor  
Philip S. Ward, Ph.D., Professor  
Becky B. Westerdahl, Ph.D., Professor  
Neal M. Williams, Ph.D., Associate Professor  
Lavie H. Yang, Ph.D., Assistant Professor  
Frank G. Zalom, Ph.D., Distinguished Professor

Emeriti Faculty

Oscar G. Bacon, Ph.D., Professor Emeritus  
Peter S. Cranston, Ph.D., Professor Emeritus  
Hugh Dingle, Ph.D., Professor Emeritus  
John D. Edman, Ph.D., Professor Emeritus  
Lester E. Ehler, Ph.D., Professor  
Bruce F. Elfridge, Ph.D., Professor Emeritus  
Norman E. Gary, Ph.D., Professor Emeritus  
Jeffrey Granett, Ph.D., Professor Emeritus  
Albert A. Grigg, Jr., Ph.D., Professor Emeritus  
Penelope J. Oulton, Ph.D., Professor Emeritus  
Bruce A. Jeffee, Ph.D., Professor Emeritus  
Harry K. Kaye, Ph.D., Professor Emeritus  
Michael S. Parrella, Ph.D., Professor Emeritus  
Donald L. McLean, Ph.D., Professor Emeritus
The Major Program

The Entomology major is a general biological science program. The curriculum is designed to develop an understanding of fundamental biological concepts by studying insects. Insects offer unique opportunities to study biological systems and are model experimental animals. Many insects are either pests, of beneficial species that have great importance to the economy, environment or public health. Students may focus on specific areas of interest including agricultural entomology, insect systematics and evolution, behavior and ecology, medical entomology, and insect molecular biology. The major also has strong ties to toxicology.

Career Alternatives

Entomology graduates find careers in many different areas of applied or basic biology. Graduates have the opportunity to continue in professional graduate programs such as veterinary or human medicine, or get advanced degrees leading to careers in biotechnology, conservation biology, or academic teaching and research. Many graduates have participated in internship programs with the California Department of Food and Agriculture and found careers in diagnostic laboratories, conducting insect surveys, and/or developing entomological collections. Other graduates have worked in agriculture in the area of insect pest management. Graduates are prepared for managerial and technical positions with state and federal agencies and in agricultural production and supporting industries. Some entomology graduates pursue careers in primary, secondary, and college level science education.

B.S. Major Requirements:

Preparatory Subject Matter ................. 49-53

- Biological Sciences 2A, 2B, 2C ............... 15
- Chemistry 2A, 2B, 8A, 8B .................... 16
- Mathematics 1A-16B-16C or 17A-17B-17C or 21A-21B-21C ........................... 9-12
- Physics 1A, 1B ..................................... 6
- Statistics 13, 32, or Plant Sciences 120, 21 or Engineering 5 ............................... 3-4

Depth Subject Matter ......................... 34-40

- Microbiology 104, Plant Biology 14B, Plant Pathology 120 or Microbiology 162 3-5
- Biological Sciences 101 .......................... 4
- Entomology 105, Environmental Science and Policy 100 or Evolution and Ecology 101 .............................. 4
- Evolution and Ecology 100 ...................... 4
- Biological Sciences 102 and 103 or Animal Biology 102 and 103 .......................... 6-10
- Entomology 100, 105 ............................. 6

At least 7 units from Entomology 102, 103, 104, 107, 109, or 116 or Entomology 110 .......................... 7

Restricted Electives .......................... 34

Upper division Entomology and Nematology courses ........................................ 14
Upper division electives related to student's interest with approval of adviser ............... 20

Note: No more units from Entomology 192, 197 and 199 may count toward fulfilling depth subject matter or restricted elective units.

Total Units for the Major ..................... 117-127

Major Adviser. S. Lawler, S. Nadler

Minor Program Requirements:

The Department of Entomology has five minor programs open to students in other disciplines who are interested in rounding out their academic study with a concentration in the area of entomology.

- Insect Biology .................................. 19-33

- Entomology 100, 101, 104, 153, 156, 158, 162, 192 ........................... 15

- At least two additional upper division Entomology courses (except courses 192, 198, 199) .................. 6-10

- Agricultural Pest Management ............. 21-23

- Entomology 100, 104, 110, 135, 137, 163 .......................... 15

- At least two courses in Entomology 100, 105, 176, Plant Pathology 120 .......................... 6-8

- Insect Ecology and Evolution ............ 20-21

- Entomology 100, 105, and Entomology 105 or 104 .......................... 10-11

- At least seven units from Entomology 103, 107, 109, 116, 158, 163, 165, 168 .......................... 7

- Evolution and Ecology 149 or Environmental Science and Policy 101 .......................... 4

- Medical-Veterinary Entomology ......... 19

- Entomology 100, 101, 104, 153, 156, 158, Microbiology 162 .......................... 4

- At least four units from Entomology 156, 158, Microbiology 162, 163, 165 .......................... 15

- Forensic Entomology .......................... 22

- Entomology 100, 105, 102, 158 .......................... 13

- Biological Science 2A .......................... 5

- Entomology 105, Evolution and Ecology 101, or Environmental Science and Policy 100 .......................... 4

- Minor Adviser. S. Lawler, S. Nadler

Graduate Study, The Department of Entomology offers a program of study and research leading to the M.S. and Ph.D. degrees. See Graduate Studies, for further details.

Graduate Advisers. See http://entomology.ucdavis.edu/grad/.

Related Courses. See courses in Nematology.

Courses in Entomology (ENT)

Lower Division

1. Art, Science and the World of Insects (3)

Lecture—3 hours, laboratory—3 hours. Fusion of entomology and art in appreciation of insect biology, ecology, interactions with humans and importance in human culture. Multidisciplinary approaches in education and career paths in entomology and art. GE credit: Art. 183, SciEng or SocSci | AH or SE or SS, OL, VI, WE—II–III. (III.) Ullman

2. Biodiversity (3)

Lecture—2 hours, lecture/discussion—1 hour. Introduction to nomenclature and identification of biodiversity (the diversity of life, with emphasis on plants and animals, especially insects). Humans and biodiversity—domestication, aesthetics, ethics and valuation. Species richness and "success." Biodiversity through time; monitoring, evaluation and conservation. Biomes—global, continental and Californian. (Some course as Evolution and Ecology 2) GE credit: SciEng, Wrt | SE, SI, WE—II. (I.)

10. Natural History of Insects (3)

Lecture—3 hours. Designed for students not specializing in entomology. Not open for credit to students who have had course 100, but students who have taken this course may take course 100 for credit. An introduction to the insects detailing their great variety, structures and functions, habits, and their significance in relation to plants and animals including man. GE credit: SciEng | SE, SI—II–III. (I.II.) Kimsey, Parrella

90X. Special Topics in Entomology (2)

Seminar—2 hours. Freshman seminar course for in-depth examination of a special topic within the subject area. May be repeated two times for credit. (P/NP grading only)—I, II, III.

99. Special Study for Undergraduates (1-5)

(P/NP grading only)

Upper Division

100. General Entomology (4)

Lecture—3 hours, term paper. Prerequisite: Biologi- cal Sciences 1B. Biology, anatomy, physiology, development, classification, ecology and relation of insects to human welfare. GE credit: SciEng, Wrt | WE—II–III. (III.) Kimsey

100L. General Entomology Laboratory (2)

Laboratory—6 hours. Prerequisite: course 100 (may be taken concurrently). Anatomy, development, pop- ulation ecology, methods of collecting, classification and identification of insects, and some of the major families. GE credit: Wrt | VL—II–III, (III.) Kimsey

101. Functional Insect Morphology (3)

Lecture—2 hours, laboratory—3 hours. Prerequisite: course 100. Study of the basic external and internal structures, organs and tissues of insects, with empha- sis on functional systems. Functional anatomy, histol- ogy and fine structures of important organs and tissues will be discussed. GE credit: SciEng—II. (I.)

102. Insect Physiology (4)

Lecture—3 hours, discussion—1 hour. Prerequisite: course 100 or course in physiology or invertebrate zoology. Processes by which insects maintain them- selves, reproduce, and adapt to their environment. The insect as models for basic/applied research through detailed analysis of metabolic, physiological, and behavioral processes. Emphasis on analysis of meth- odology, facts, and theory. GE credit: SciEng | SE, WE—II–III, (III.) Chiu

103. Insect Systematics (3)

Lecture—2 hours, discussion—1 hour. Prerequisite: introductory course in zoology or entomology. Princi- ples and methods of systematics, with particular refer- ence to insects. Emphasis on different theories of classification, and analysis of phylogenetic relationships. Offered in alternate years. GE credit: SciEng, Wrt—II–III.

104. Behavioral Ecology of Insects (3)

Lecture—3 hours. Prerequisite: introductory biology or zoology. Basic principles and mechanisms of insect behavior and ecology. An evolutionary approach to understanding behavioral ecology of insects. GE credit: SciEng—II, (III) Lewis

105. Insect Ecology (4)

Lecture/discussion—3 hours, term paper. Prerequi- site: Biological Sciences 2B. Introduction to insect ecology combining fundamental concepts and ques- tions in ecology with ideas, hypotheses and insights from insects. Integrates aspects of individual, popula- tion, community and ecosystem ecology. Emphasis on the scientific process: observing nature, asking...
107. California Insect Diversity (5)
Lecture—1 hour; laboratory—6 hours; fieldwork—6 hours. Prerequisite: an introductory course in entomology. Survey of the diversity of insects from selected ecological zones in California with emphasis on collection, identification, and natural history. Offered in alternate years. GE credit: SciEng, Wrt | SE, SL, WE.—I. (I.) Yang

109. Field Taxonomy and Ecology (7)
Lecture—2 hours; laboratory—36 hours; five-week course. Prerequisite: an introductory course in entomology or consent of instructor. The study of insects in their natural habitats; their identification and ecology. Offered in alternate years. GE credit: SciEng, Wrt | SE—III. Ward

110. Arthropod Pest Management (5)
Lecture—3 hours; laboratory—6 hours. Prerequisite: Biological Science 1B. Development of the ecological basis for the integrated pest management program. Special emphasis on the role of natural predators and parasitoids. Offered in alternate years. GE credit: SciEng, Wrt | SE—IV. (IV.) Ward

116. Freshwater Macroinvertebrates (3)
Lecture—2 hours; laboratory—3 hours. Prerequisite: Biological Sciences 2B or equivalent. Biological ecology and taxonomy of freshwater macroinvertebrates, including insects, crustaceans, molluscs, worms, leeches, flatworms and others. Adaptations to life in freshwater. Aquatic food webs. Uses of macroinvertebrates in water quality monitoring. Field trips during regular lab hours. Limited enrollment. GE credit: SciEng | SE, SL, WE.—III. (III.) Lawler

116L. Aquatic Insect Collection (2)
Laboratory—4 hours; field work—2 hours. Prerequisite: high school biology recommended. Students will learn to collect aquatic insects and to identify them to Family and Genus levels. Collections will require two, one-day weekend field trips (by arrangement). Collection requires 40 families, with 20 identified to Genus level. Limited enrollment. May not be taken for credit if students have completed the 8-unit option for Entomology 116.—III. (III.) Lawler

117. Longevity (4)
Lecture—3 hours; term paper. Prerequisite: upper division standing or consent of instructor. Nature, origin, determinants, and limits of longevity with particular emphasis on implications of findings from non-human model systems including natural history, ecology and evolution of life span; description of basic demographic techniques including life table methods. (Same course as Evolution and Ecology 101.) GE credit: SciEng | SE, SL, WE.—III. (III.) Lawler

119. Apiculture (3)
Lecture—3 hours; papers. Prerequisite: Biological Sciences 1C recommended. The biology of honeybees; communication, orientation, social organization, foraging activities, honey production, pollination activities. GE credit: SciEng, Wrt | OL, VL, WE.—I. Lucas, Gilbertson, Ullman

123. Plant-Virus-Vector Interaction (3)
Lecture—3 hours. Prerequisite: Biological Sciences 2A, Biological Sciences 101; Plant Biology 105, Plant Pathology 120, and course 100 recommended. Analysis and discussion of interactions necessary for viruses to infect plants. Interactions among insect vectors and host plants involved in the plant-virus life cycle. Evolutionary aspects of the molecular components involved in viral infection and modern approaches to the eradication of viral movement. (Same course as Plant Biology 123 and Plant Pathology 123.) Offered in alternate years. GE credit: SE, SL, WE.—II. (II.) Lucas, Gilbertson, Ullman

135. Introduction to Biological Control (4)
Lecture—3 hours; laboratory—3 hours. Prerequisite: course 100 or 110. Principles of biological control of arthropod pests and diseases. Biology of pathogens, entomopathogenic nematodes, parasitoids, and predators. Emphasis in classical and augmentative biological control. Role of biological control in pest management. Offered in alternate years—II. (II.) Yang, Farrel

153. Medical Entomology (3)
Lecture—3 hours. Prerequisite: Biological Sciences 1A, 1B, upper division standing in one of the biological sciences, or consent of instructor. Basic biology and classification of medically important arthropods with special emphasis on the ecology of arthropodborne diseases and principles of their control. Relations of arthropods to human health. GE credit: SciEng, Wrt | SE, SL, WE.—II. (II.) Scott

156. Biology of Parasitism (3)
Lecture—3 hours. Prerequisite: Biological Sciences 1A or consent of instructors. Lectures on the biological ecology and classification of medically important arthropods with emphasis on host-parasite relationships using selected examples from protozoan and metazoan fauna. GE credit: SciEng | SE—III. (III.) R. Kimsey, Nadler

156L. Biology of Laboratory (1)
Laboratory—3 hours. Prerequisite: course 156 (concurrently) or consent of instructor. Laboratory demonstrations using selected examples of protozoan and metazoan organisms along with various techniques used in parasitology. Prerequisite: consent of preceptor required in the lecture course. GE credit: SciEng, Wrt | SE—III. (III.) R. Kimsey, Nadler

158. Forensic Entomology (3)
Lecture—2 hours; laboratory—4 hours. Prerequisite: Biological Sciences 1B or Entomology 100, upper division standing. Arthropods, their general biology, succession, developmental cycles and population biology in matters of criminal prosecution and civil litigation. Emphasis on basic arthropod biology, ecological and developmental concepts and methods, development of reasoning abilities, implication, development of opinions and evidence. GE credit: SciEng or SocSci, Wrt | WE—III. (III.) R. Kimsey

180A. Experimental Ecology and Evolution in the Field (4)
Lecture/laboratory—3 hours; fieldwork—3 hours. Prerequisite: course 105, or Environmental Science and Policy 100; Evolution and Ecology 100; Evolution and Ecology 101. Experimental design in field ecology. Examination of primary literature, experimental design, independent and collaborative research, analysis of original research paper based on field experiments. (Same course as Evolution and Ecology 180A.) Offered in alternate years. (Deferred grading only; pending completion of sequence.) GE credit: SciEng | QL, VL, WE.—II. (II.) Yang

180B. Experimental Ecology and Evolution in the Field (4)
Lecture/laboratory—3 hours; fieldwork—3 hours. Prerequisite: course 105 and Ecology or Entomology 180A; Evolution and Ecology 100, Evolution and Ecology 101, or Environmental Science and Policy 100; course 105. Experimental design in field ecology. Examination of primary literature, experimental design, independent and collaborative research, analysis of data, development of original research paper based on field experiments. (Same course as Evolution and Ecology 180B.) Offered in alternate years. (Deferred grading only, pending completion of sequence.) GE credit: SciEng | QL, SL, WE.—II. (II.) Yang

190A. Veterinary Entomology (2)
Lecture—3 hours. Prerequisite: course 153 and one course in microbiology: course 153 strongly recommended. An analysis of several arthropod-borne human diseases with emphasis on the relationships of the biology of the vector to the ecology of the disease. Discussion includes demonstration of vectors and techniques. Offered irregularly.—II. (II.) Yang

200. Exploratory Topics in Entomology (2)
Seminar—2 hours. Interdisciplinary topics in entomology, including innovative applications of entomological concepts to other fields of research and human endeavor (e.g., medical entomology, art, criminology). May be repeated up to 8 units of credit when topic differs.—I, II, III.
Environmental Geology

biochemistry and/or behavior. Interpretation and description of physiological and behavioral mechanisms and functions. Application of general principles to solution of problems in the laboratory and field. May be repeated for up to 8 units of credit if topic differs. Offered irregularly.—I, II, III. 299N. Current Topics in Insect Biotechnology and Genomics (2) Seminar—2 hours. Prerequisite: course 212. Discussion of advances in insect biotechnology, including genetic engineering and genomics. May be repeated for up to 6 units of credit if topic differs. Offered irregularly.—I, II, III. Hammond, Leal

294. Current Topics in Insect Ecology, Evolution, and Systematics (2) Seminar—2 hours. Prerequisite: course 103, general course in ecology or evolution. Discussions of advanced topics in ecology, evolution and systematics with emphasis on analysis of factors influencing the distribution, abundance, adaptations and evolutionary relationships of insects. Includes consideration of applications of basic theory (e.g., biological control). May be repeated for credit up to eight units if topics differ. Offered irregularly.—I, II, III. 295. Current Topics in Agricultural Entomology and Bee Biology (2) Seminar—2 hours. Prerequisite: course 110 if topic covers pests and beneficial predators, course 119 if topic is bee biology, or either if topic bridges both. Discussion of advanced topics about the biology, ecology, behavior, and management of pest and beneficial insects. May be repeated for up to 8 units of credit if topic differs. Offered irregularly.—I, II, III. 297N. Seminar in Entomology (1) Seminar—1 hour. Weekly entomology seminar. May be repeated up to 9 units of credit if topic differs. [S/U grading only]—I, II, III. (I, II, III.)

Environmental Horticulture

[College of Agricultural and Environmental Sciences] Faculty. See Plant Sciences, on page 476. The Program. Students of Environmental Horticulture learn how plants improve the environment and the quality of our lives. Plants are used to revegetate and restore disturbed lands, control erosion, and reduce energy and water consumption. The ornamental use of plants to improve the aesthetic quality of urban and rural landscapes, recreational areas, and commercial sites is an important aspect of the study of environmental horticulture. Students interested in Environmental Horticulture can obtain a B.S. degree in Environmental Horticulture and Urban Forestry and may specialize in Floriculture/Nursery Management, Urban Forestry, Landscape Management/ Turf or Plant Biodiversity/Restoration. Students can develop an individual major with the help of an Environmental Horticulture faculty advisor and approval of the College’s Individual Major Committee. A minor in Environmental Horticulture or Landscape Restoration is available to students in other majors.

Career Alternatives. Opportunities in this field include growing and/or managing plants in a variety of settings, including nurseries, golf courses and arboreta, as an urban, landscape, or restoration horticulturist, business ownership, working for public agencies or private landscape firms/corporations, park management and landscape contracting. Students are encouraged to develop internships on or off campus to augment their activities in the classroom and laboratory.

Minor Program Requirements:

Environmental Horticulture 23-25

Plant Sciences 171, 180, 185, 190..... 4

Select three courses from: Environmental Horticulture 100, 120, 125, 130, 133

Minor Adviser. J.A. Harding (Plant Sciences)

Related Undergraduate Programs. See the undergraduate majors in Ecological Management and Restoration, on page 229, Environmental Horticulture and Urban Forestry, on page 297, Plant Science, on page 471, and Plant Sciences, on page 476.

Graduate Study. For graduate study related to this field, see the M.S. and Ph.D. degree programs in the graduate groups of Horticulture and Agronomy, Plant Biology, Ecology, and Genetics. Also see Graduate Studies, on page 111.

Related Courses. See Plant Biology and Plant Sciences.

Courses in Environmental Horticulture (ENH) Questions pertaining to the following courses should be directed to the instructor or to the Plant Sciences Advising Office in 122A Plant and Environmental Sciences Building 530-752-7738.

Lower Division

1. Introduction to Environmental Horticulture/Urban Forestry (3) Lecture—3 hours. Introduction to the use of plants to enhance the physical, visual and social environment. The use of ecological principles in developing sustainable, low maintenance landscape systems will be presented. Career opportunities will be discussed. GE credit: SciEng, WRT 1, SE, VL, WE.—I. (I.) Volder

Environmental Geology

[College of Letters and Science] The minor in Environmental Geology examines the multidisciplinary factors of geology and related earth science fields, and planning and resources oriented programs. Students in the minor are encouraged to participate in internship programs that assist them in solidifying the Environmental Geology minor with their Geology major or other major field areas that include geologic components.

The minor is sponsored by the Department of Earth and Planetary Sciences in 2119 Earth and Physical Sciences Building.

Minor Program Requirements:

Environmental Geology 25-26

Geology 130, 134, and Environmental Science and Management 186................. 9

Soil Science 118......................... 4

Hydrologic Science 141 or Civil and Environmental Engineering 142 .......... 4

Two courses chosen from Environmental Science and Policy 160, 171, 179. Hydrologic Sciences 144, 146 .......... 8-9

Minor Adviser. See Geology major advisers

Quarter Offered: I,II, Fall; II, Winter; III, Spring; IV, Summer; 2015-2016 offering in parentheses Pre-Fall 2011 General Education (GE): ArtHum—Arts and Humanities; SciEng—Science and Engineering; SocSci—Social Sciences; ACH—American Cultures; DD—Domestic Diversity; WRT—Writing Experience Fall 2011 and on Revised General Education (GE): AH—Arts and Humanities; SE—Science and Engineering; SS—Social Sciences; ACH—American Cultures; DD—Domestic Diversity, OL—Oral Skills, QL—Quantitative, SL—Scientific, VL—Visual, WC—World Cultures, WRT—Writing Experience