From: Soave, Melissa
To: Soave, Melissa
Subject: FW: Fwd: FW: Council on Academic Affairs Semester Conversion
Date: Wednesday, February 23, 2011 6:58:10 PM

---------- Forwarded message ----------
From: **Susan Fisher** <14.fisher@gmail.com>
Date: Tue, Feb 22, 2011 at 8:48 PM
Subject: Fwd: Fwd: FW: Council on Academic Affairs Semester Conversion
To: alexander.282@gmail.com

Dear Leslie,

Below, please find Entomology's response to the questions you had about conversion to semesters.

Susan Fisher
Question 1, part 1: The entomology faculty thoroughly considered the decision to remove the Organic Chemistry and Calculus 2 courses from the entomology major requirements. The current requirement for Calculus-2 and Organic under the quarter system is typical of all majors in the other departments in the College of Biological Sciences, which was entomology's academic home until last year. Now that we moved to the College of FAES, our proposed dropping of calculus-2 and organic chem would make us similar to other majors in CFAES, which do not require these courses. We consulted with current and former students and ultimately determined that majors would not be adversely affected by the removal of these requirements. Students are still required to take General Chemistry and Calculus 1. Moreover, for those students considering graduate school, we still recommend that they take Calculus 2 and Organic Chemistry as electives.

Question 1, part 2: Our primary distance ed course is 4600. The 4600 course is not for our majors; it is a support course. It serves as a pre-requisite for any of the 7 applied entomology courses for majors from other related departments. Establishing 4600 as a distance ed class gives more flexibility in when it is offered and allows us to reach non-traditional students who do not live in Columbus but who can attend one long class per week. We will offer 4600 in the first 7 weeks of both autumn and spring semesters. It leads into the applied courses held in the second 7 weeks. Moreover, some of the applied classes will have the lecture component as distance ed, but all will meet in person for the lab component. Because our department is co-located at the main campus in Columbus and at Wooster, we regularly use distance learning technologies for courses, guest lectures, and department meetings. We anticipate a very smooth transition to the distance education format for 4600.

Question 2: Graduate student advising will remain a cornerstone of our department. Our advising plan has two parts: we will disseminate general information about the transition to all graduate students and make that same information available on our department website. In addition to the on-going advising, each advisor will also have a follow up conversation with each of his/her advisees specifically to address any individual concerns. Our graduate student club recently met and reviewed our current transition plan, and reported that they would like to see a plan with much more detail. The entomology curriculum committee agrees with this

need, and plans to put together a more detailed version by the start of spring quarter 2011.

Dear Linda,

I am writing on behalf of the Council of Academic Affairs in regards to the process of semester conversion. I am the Chair of the Subcommittee that is responsible for reviewing the proposals from the College of FAES. We are hoping that we can bring the Entomology proposals to the entire CAA at our next meeting on Wednesday but we need answers to a few quick questions as soon as you are able. I'm sorry to both you with this, rather than someone directly in Entomology, but there was not a representative from Entomology listed on our contact sheet.

Overall, we were very impressed with the proposals coming from Entomology. They were extremely well thought out and conceived, and on the graduate level we were especially impressed with their efforts to incorporate students in the process.

As such, we just have a few questions:

1. In regards to the BS, do the faculty have concerns about the impact that the removal of the chemistry and calculus requirement might have on students? In addition, it seems that some required courses will be distance-learning courses; can they clarify the rationale for that?

2. On the graduate level, we had a slight concern about the transition plan. We liked the course plans, but we felt that they didn't make clear exactly what the process of advising would be. We want to hear them re-affirm the university's commitment that students will not be harmed by the transition.

Can you or someone in Entomology address these concerns for us?

Best, Leslie

--
Leslie M. Alexander, Ph.D.
Associate Professor
Department of History
The Ohio State University

--
Leslie M. Alexander, Ph.D.
Associate Professor
Department of History
The Ohio State University

Status: PENDING

PROGRAM REQUEST
Major in Entomology

Last Updated: Stokoe,Laurie Anne
01/14/2011

Fiscal Unit/Academic Org	Entomology - D1130
Administering College/Academic Group	Food, Agric & Environ Science
Co-adminstering College/Academic Group	
Semester Conversion Designation	Converted with minimal changes to program goals and/or curricular requirements (e.g., sub-plan/specialization name changes, changes in electives and/or prerequisites, minimal changes in overall structure of program, minimal or no changes in program goals or content)
Current Program/Plan Name	Entomology
Proposed Program/Plan Name	Major in Entomology
Program/Plan Code Abbreviation	ENTMLGY-BS
Current Degree Title	Bachelor of Science

Credit Hour Explanation

Program credit hour requirements		A) Number of credit hours in current program (Quarter credit hours)	B) Calculated result for 2/3rds of current (Semester credit hours)	C) Number of credit hours required for proposed program (Semester credit hours)	D) Change in credit hours
Total minimum credit hours required for completion of program		55	36.7	36	0.7
Required credit hours offered by the unit	Minimum	20	13.3	16	2.7
	Maximum	28	18.7	18	0.7
Required credit hours offered outside of the unit	Minimum	27	18.0	18	0.0
	Maximum	35	23.3	20	3.3
Required prerequisite credit hours not included above	Minimum	0	0.0	0	0.0
	Maximum	0	0.0	0	0.0

Program Learning Goals

Note: these are required for all undergraduate degree programs and majors now, and will be required for all graduate and professional degree programs in 2012. Nonetheless, all programs are encouraged to complete these now.

Program Learning Goals

- 1. Students will achieve an understanding of insect biology at the molecular, biochemical, organismal, population, community, and ecosystem levels.
- 2. Students will achieve a holistic framework for understanding sustainability in ways that cross disciplinary boundaries from entomology to other natural, physical, economic and social sciences.
- 3. Students will achieve a conceptual understanding of human and natural ecosystems through the lens of insect science.
- 4. Students will achieve an appreciation of the threats and ecosystem services attributed to insects and how these can shape scientific discovery, policy formation, and resource management decisions.
- 5. Students will achieve an understanding of the history and the nature of science including hypothesis testing as required for scientifically literate populace.
- 6. Students will achieve an ethical framework for inquiry and action in science and society that includes entrepreneurship and business; collaboration, political and community engagement; and environmental stewardship.
- 7. Students will achieve a demonstrated ability to apply a set of critical thinking tools to issue-based cross-disciplinary work and to communicate their thinking and analysis.

Assessment

Assessment plan includes student learning goals, how those goals are evaluated, and how the information collected is used to improve student learning. An assessment plan is required for undergraduate majors and degrees. Graduate and professional degree programs are encouraged to complete this now, but will not be required to do so until 2012.

Is this a degree program (undergraduate, graduate, or professional) or major proposal? Yes

Does the degree program or major have an assessment plan on file with the university Office of Academic Affairs? No

DIRECT MEASURES (means of assessment that measure performance directly, are authentic and minimize mitigating or intervening factors)

Classroom assignments

- Other classroom assessment methods (e.g., writing assignments, oral presentations, oral exams)

Evaluation of a body of work produced by the student

- Capstone course reports, papers, or presentations

INDIRECT MEASURES (means of assessment that are related to direct measures but are steps removed from those measures)

Surveys and Interviews

- Student evaluation of instruction

Additional types of indirect evidence

- Job or post-baccalaureate education placement

USE OF DATA (how the program uses or will use the evaluation data to make evidence-based improvements to the program periodically)

- Analyze and discuss trends with the unit's faculty
- Make improvements in curricular requirements (e.g., add, subtract courses)
- Make improvements in course content
- Make improvements in course delivery and learning activities within courses

Program Specializations/Sub-Plans

If you do not specify a program specialization/sub-plan it will be assumed you are submitting this program for all program specializations/sub-plans.

Pre-Major

Does this Program have a Pre-Major? No

Attachments

- CurriculumMapEntomolUG.pdf: learning objectives

  (Curricular Map(s). Owner: Welty,Celeste)

- ProgramProposalEntomologyBS.pdf: description of major

  (Program Proposal. Owner: Welty,Celeste)

Comments

Status: PENDING

PROGRAM REQUEST
Major in Entomology

Last Updated: Stokoe,Laurie Anne
01/14/2011

Workflow Information

Status	User(s)	Date/Time	Step
Submitted	Welty,Celeste	11/12/2010 01:55 PM	Submitted for Approval
Approved	Fisher,Susan Warwick	11/12/2010 04:46 PM	Unit Approval
Revision Requested	Stokoe,Laurie Anne	11/15/2010 03:52 PM	College Approval
Submitted	Welty,Celeste	12/10/2010 04:20 PM	Submitted for Approval
Approved	Fisher,Susan Warwick	12/11/2010 11:30 AM	Unit Approval
Approved	Stokoe,Laurie Anne	01/14/2011 04:23 PM	College Approval
Pending Approval	Soave,Melissa A	01/14/2011 04:23 PM	CAA Approval

Program Proposal

Bachelor of Science in Agriculture with Major in Entomology

The Department of Entomology

College of Food, Agricultural and Environmental Sciences

November 2010

THE OHIO STATE UNIVERSITY

Department of Entomology

College of Food, Agriculture and Environmental Sciences
202 Kottman Hall
2021 Coffey Rd.
Columbus, OH 43210

Phone (614) 292-8209

19 November 2010

OSU Office of Academic Affairs
203 Bricker Hall
190 North Oval Mall
Columbus OH 43210

To whom it may concern:

This letter summarizes the status of our undergraduate major program in Entomology. Our undergraduate program has three elements: the B.S. in Agriculture with a major in entomology, the minor in entomology, and entomology service courses for students in other majors such as Plant Health Management and Horticulture and Crop Science.

Summary of changes in the undergraduate major:
The entomology major is undergoing several changes related both to the semester conversion and to our move earlier this year from the College of Biological Sciences (CBS) to the College of Food, Agricultural and Environmental Sciences (CFAES). The entomology curriculum committee reviewed the B.S. program in Entomology between November 2009 and February 2010. A summary of this review was presented to the entomology faculty and discussed in depth at a retreat on 10-11 March 2010. Details of the program were further developed by the curriculum committee between March and November 2010. The requirements for the entomology major for the semester system were approved by our faculty on 11/19/2010 with a vote 17-0 in favor of the program.

The major in entomology includes requirements for a solid foundation in biology, chemistry, and math, as well as in ecology and genetics. This foundation is accompanied by a core of three entomology courses: general entomology, applied entomology, and a capstone, along with a choice of electives in several sub-disciplines of entomology. The fundamental elements of the entomology major have not changed with the change in colleges, but there are some differences in the general education requirement of the two colleges, and in typical requirements of majors in the two colleges. The most noticeable difference to students majoring in entomology is that organic chemistry and calculus-2 are no longer required as they were in CBS, although they are still recommended. Other differences are that we are requiring an internship in accordance with CFAES majors, and we are adding a capstone course.

We have developed a set of seven learning objectives for our undergraduate program, which we have used in developing our requirements and course plans and which have been key in developing a new capstone course. In summary, we are pleased that our entomology major will benefit from improvements in a number of our undergraduate course offerings and in the development of an integrated curriculum.

Summary of changes in undergraduate course offerings:
1. Most of our courses are one-quarter courses that are not part of a sequence, so the transition to semesters resulted in generally the same number of courses and the same names of courses. Most courses were 5 credits in the quarter system and will now be 3 credits in the semester system.

2. A review of individual courses found that there was duplication of introductory material in several courses that are sometimes taken by the same students. A plan was made to modularize several courses so that the introductory module could be taken just once.

3. We are offering a revised version of courses in applied entomology. Students majoring in Entomology, Horticulture and Crop Science, and Plant Health Management are required to take one of these courses. Instead of just two choices (Entomology 460 and 462) that are standard full-term courses, we are offering these in a modular format. The introductory module (4600) is a one-credit course that is a distance course. It is followed by any of 7 modules in general pest management, landscape entomology, agricultural entomology, urban entomology, public health entomology, forensic entomology, and veterinary entomology. Several of these are partial distance courses, with the lectures as the distance component and the labs as traditional in-person components.

4. Our service course for forestry majors, "Forest Entomology" (461) has been redesigned and combined with plant pathology material to become a co-listed course, "Ecology and Management of Pathogens and Insects Affecting Trees in Forest and Urban Environments" (Entomology/Plant Pathology 5110).

5 Several of our most popular courses are being converted to semesters with little change; these include General Entomology (500/3000), Social Insects (333/3330 and H444/4440H), and Insect Biology (101/1101). We are retaining our three summer courses that are taught at Stone Lab (126/1260, 520/4200, 612/5120), which are most commonly taken by students outside of our major; these also are undergoing negligible change with the semester system.

6. We continue to offer Entomology 1101 (101), "Insect biology", which can be used to meet the GEC biology requirement. We are proposing a new service course that is a variant of Entomology 101 that will be Entomology 1111, "Biology of Insects, Animals, and Fungi Affecting Buildings". We propose that this will be used to fulfill the biology requirement of the GEC for students in the Construction Systems Management major.

7. Now that a two-course sequence in biology is no longer required in the GEC, we are changing our second course, Entomology 102 ("Insect Biology 2"), to 2101, "Insects and Human Affairs: Pests, Plagues, Poisons & Politics". This will be a distance course that could fill the Cultures & Ideas section of the Arts and Humanities requirement of the GEC.

8. We are shifting several elective courses that were at a 600 level to the 5000 level: Biological Control (5500), Insect Behavior (5420), and Aquatic Entomology (5120). We thus hope to attract more upper level undergraduates to these courses.

9. We are offering three new courses as electives for our majors, minors, and students from other majors. These are Introductory Beekeeping (2200), Pesticide Science (5800), and Field Insect Taxonomy (5130).

Sincerely,

Susan W. Fisher

Susan Fisher
Chair, Department of Entomology

Program Rationale Statement

1. Students majoring in entomology study insects. Insects are the largest existing group of living organisms on Planet Earth and, while largely unappreciated, are arguably the most impactful. Insects are highly adaptable and can be found in virtually all terrestrial and fresh water habitats. Some have major adverse impacts on human activities: destroying crops and food supplies, transmitting diseases, or simply being annoyances. However, the vast majority of insects are considered beneficial: providing pollination services, being primary consumers of dead plants and animals, controlling their own kind (parasites and predators), and even serving as food. Insects have served as major scientific models in studies of genetics, behavior, physiology and population dynamics. Students majoring in entomology are exposed to these many roles that insects play in the modern world. To meet their career goals, students majoring in entomology can select from among two tracks: Pre-Graduate Studies/Pre-Medical/Pre-Veterinary School, and Applied Pest Management. The Applied Pest Management track has several emphasis areas with specific courses recommended for each student (e.g., Integrated Pest Management, Public Health, Urban Landscape, Agriculture). Students who want a broader education in plant health and pest management can participate in the Plant Health Management major offered in conjunction with the Plant Pathology Department. Immediately after completing their degree, students following the Applied Pest Management track typically obtain employment in the pest control industry, plant health management, vector control (including the Armed Forces), and chemical supply industries. The major tracks are not mutually exclusive so that students can tailor their programs to suit their particular needs.

2. The B.S major in Entomology includes requirements for a solid foundation in biology, chemistry, and math, as well as in ecology and genetics. This foundation is accompanied by a core of three entomology courses: general entomology, applied entomology, and a capstone, along with a choice of electives in several sub-disciplines of entomology. Students are encouraged to do an independent research project. Through our departmental advising program, we suggest that each student choose either a pre-graduate school track or an applied pest management track. Each student, in conjunction with his or her advisor, will select courses that best meet his or her specific needs and interests.

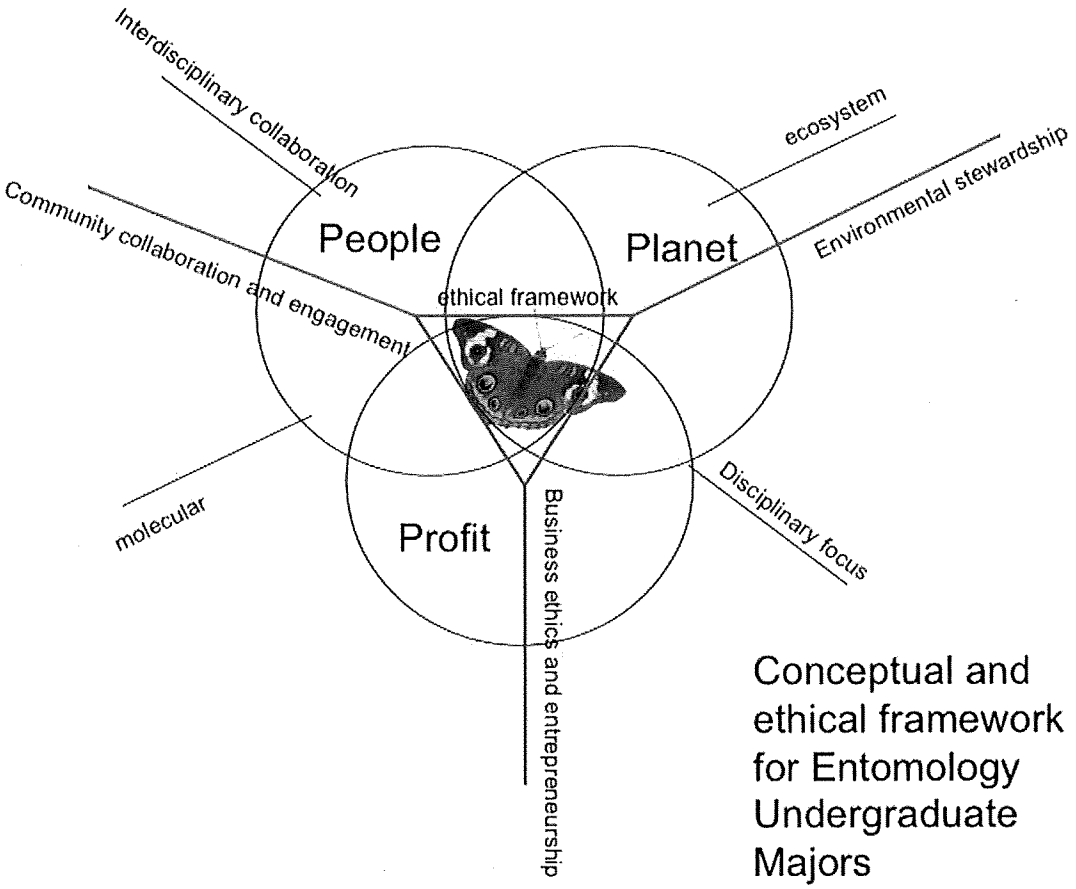
3. The effect of our recent departmental reorganization has been assessed. The move of our department from the College of Biological Sciences (CBS) to the College of Food, Agricultural and Environmental Sciences (CFAES), which was finalized in February 2010, affected the requirements of the entomology major. The fundamental elements of the major have not changed with the change in colleges, but there are some differences in the general education requirement of the two colleges, and in typical requirements of majors in the two colleges. The most noticeable difference to students majoring in Entomology is that organic chemistry and calculus-2 are no longer required as they were in CBS, although they are still recommended. Other differences are that we are requiring an internship course in accordance with CFAES majors, and we are adding a capstone course.

4. A set of seven broad learning objectives for the undergraduate program was developed in March 2010, and a curriculum map was made to show which objectives are being met by which courses. Most of the objectives were already being met by our existing curriculum, but it became apparent that our lack of a capstone course prevented us from fully meeting some of our objectives. This was resolved by developing two capstone courses: one in Current Topics in Entomology, Science and Society (Entomology 5601), and one in Plant Health Management that is cross-listed with Plant Pathology (5604). The capstone course will also serve as our third writing course.

5. A review of individual courses found that there was duplication in several courses that are sometimes taken by the same students. A plan was mode to modularize several courses so that the introductory module could be taken just once.

6. Most of our courses are one-quarter courses that are not part of a sequence, so the transition to semesters resulted in generally the same number of courses and the same names of courses. Most courses were 5 credits in the quarter system and will now be 3 credits in the semester system.

7. On the next page is a diagram of our conceptual framework for the undergraduate major.



Conceptual and ethical framework for Entomology Undergraduate Majors

List of semester courses in Entomology: Proposed courses in OSU's new Dept. of Entomology in CFAES

New number (ENTMLGY)	*Old number (ENTOMOL)*	*Credit hours (semester)*	*With lab?*	*Title*	*Pre-requisites*	*Target students*		
						Entomology majors	*Entomology minors*	*other*
UNDERGRADUATE COURSES								
1101	101	4	yes	Insect biology	none	no	no	alternative for all majors that require Bio101
1111	(101)	4	yes	Biology of insects, animals & fungi affecting buildings	none	no	no	Const. mgmt.
1260	126	2	yes	Introductory insect field biology [StoneLab]	none	no	no	any
2101	102	3	no	Insects and human affairs: Pests, plagues, poisons & politics [distance]	none	optional (cultural GEC?)	optional (cultural GEC?)	optional (cultural GEC?)
2200	-	3	yes	Beekeeping	none	optional	optional	optional
3000	500	3	yes	General Entomology	Bio 113 or H115	required	required	optional
3330 & 4440H	333 & H444	3 & 3	no	Social Insects	Bio 101 or 113 or H115 or Ent 1101	optional	optional	optional
4191	(489)	1-2	no	Internship Experience in Entomology	Ent 3000	required	optional	optional
4193	693	1-3		Individual Studies	-	-	-	-
4194	294	1-3		Group Studies	-	-	-	-
4200	520	2	yes	Insect Biology for Teachers [Stone Lab]	junior rank or above	optional	optional	teachers; education majors
4600	460, 462	1	no	Introductory Insect Science	Bio 101 (not open if credit for Ent 1101 or 3000)	no	no	required for HCS, PHM (& Ani.Sci.?)
4601	460	2	yes	General Insect Pest Management	Ent 1101 or Ent 3000 or Ent 4600	one required (or 5110 or 5605); additional ones optional	one required (or 5110 or 5605); additional ones optional	one required for majors in HCS, PHM (& Ani.Sci.?); additional ones optional
4602	462	2	yes	Urban Landscape & Greenhouse Entomology				
4603	(460)	2	yes	Agricultural Entomology				
4604	-	2	yes	Urban Entomology: Structural & Nuisance Pests				
4606	-	2	yes	Forensic Entomology				
4607	-	2	yes	Veterinary Entomology				
4683	699	1-3	-	Research with Distinction	Permission of instructor	encouraged	optional	optional
4683H	699	1-3	-	Research with Distinction (honors)	Permission of instructor	encouraged	optional	optional
4998	699	1-3	-	Undergrad Research in Entomology	Permission of instructor	encouraged	optional	optional
COMBINED UNDERGRADUATE & GRADUATE COURSES								
5110 (cross-list Plant Path.)	461+	3	no	Ecology and Management of Pathogens and Insects Affecting Trees in Forest and Urban Environments	Bio 101 or Ent 1101	optional	optional	required for forestry majors
5120	612	3-4	yes	Aquatic Insect Biology and Ecology [Stone Lab]	15 qtr-cr hrs of Bio.Sci., at least junior standing, GPA min. 2.5, or per. instructor	optional	optional	optional
5130	-	3	yes	Field Insect Taxonomy	Ent 1101 or 3000 or 4600	Required, MS & PhD	optional	optional
5420	642	3	no	Insect Behavior: Mechanisms & Function	Bio 114 or Ent 3000	optional	optional	optional
5500	650	3	no	Biological Control of Arthropod Pests	Ent 1101 or 3000 or 4600	optional	optional	optional
5601	-	3	no	Current Topics in Entomology, Science and Society	Senior status	Required (or 5604)	optional	optional
5604 (cross-list Plant Path.)	-	2	no	Capstone Course: Problem-Based Studies in Plant Health	Junior or senior status	Required (or 5601)	optional	optional
5605	-	2	yes	Human Health Entomology	Ent 1101 or Ent 3000 or Ent 4600			
5600	660	3	no	Principles and Applications of Integrated Pest Management	Ent 1101 or 3000 or 4600	optional	optional	optional
5623	623	2	yes	Insect Morphology	Ent 1101 or 3000 or 4600	optional	optional	optional
5800	-	3	no	Pesticide Science	Bio 101 or Ent 1101	optional	optional	optional

New number (ENTMLGY)	*Old number (ENTOMOL)*	*Credit hours (semester)*	*With lab?*	*Title*	*Pre-requisites*	*Target students*		
						Entomology majors	*Entomology minors*	*other*
GRADUATE COURSES								
6193	693	1-3	-	Individual studies	-	-	-	-
6194	694	1-3	-	Group studies	-	-	-	-
6310	631	3	no	Insect physiology and molecular biology	CHEM 231 or 251 or H251, and Ent 3000	required for PhD and MS	optional	optional
6410	641	3	no	Insect ecology & evolutionary processes	EEOB 503.01 or 503.03 or permission	required for PhD and MS	optional	optional
6701	-	2	yes	Biodiversity analysis for ecosystem sustainability & resilience	Ent 3000 and 5130 or permission	All 4 required for PhD; at least 2 of these 4 required for MS.	optional	optional
6702	-	2	yes	Entomological techniques and data analysis	Ent 1101 or 3000 or 4600		optional	optional
6703	(632)	2	yes	Molecular techniques and data analysis	Mol Gen 500 or H500 or permission		optional	optional
6704	(645)	2	yes	Systems analysis from molecules to ecosystems	Calculus (Math 151 or 161 or 140 or 117); statistics (Stat 135 or 528)		optional	optional
7890	795	1-2	no	Special topics in entomology		optional	optional	optional
7910	790	2	no	The nature and practice of science		At least 2 of these 4 required for MS and PhD	optional	optional
7920	-	2	no	Presentation skills for scientists			optional	optional
7930	-	2	no	Scientific writing and grant proposal development			optional	optional
7940	-	2	no	Interdisciplinary research, teamwork, and leadership			optional	optional
8000	800	1	no	Entomology seminar		optional	optional	optional
8800	880	1	no	Research and training seminar		Required in first year	optional	optional
8999	999	1-15		Research in entomology		required for MS plan A and PhD	optional	optional

Note: we are hopeful that in EEOB, courses such as medical ent. (661), insect systematics & diversity (621), comparative endocrinology (550), general acarology (670), cladistic methods (626), and Acarology will still be offered.

Semester advising sheet:

B.S. in Agriculture with Major in Entomology

All students must complete two Global Issues courses. This requirement is the successor to the diamond/ asterisk requirement. All students must fulfill a Social Diversity requirement in the GEC which can be done by completing Rural Sociology 105 or Sociology 101

FAES 100 or USAS 100, etc	1	Math 150	5
Writing Level 1 (from list)	3	Data Analysis (from list)	3
Writing Level 2 (from list)	3	Biol. Sci: Biology 113	4
Agr Comm 390 or Comm 321	3	Biology 114 (Open option by college)	4
Literature	3	Physical Sci.: Chemistry 121	5
Art	3	Chemistry 122 (Open option by major)	5
Social Science 1 (Rural Soc 105 or Sociol 101)	3	Contemporary Issues/ College Capstone	3
Social Science 2 (AED Econ 200 or Econ 200)	3	Minor	12-15
Historical Study	3	Major	36
Culture & Ideas or Historical Study	3	Internship	1-2
		Free electives	11-15
		TOTAL	121

Minor: Students in an applied pest management track can minor in any subject, except entomology; options range from Crop Science to Public Health to Business Management. Students in a pre-graduate school or pre-medical school or pre-veterinary school track are encouraged to use the Alternative Minor, which will include organic chemistry and Calculus-2 and an option for physics.

Major Requirements **36**

Entomology core required courses:			*5-6*
ENTMLGY 3000	General Entomology	3	
ENTMLGY 5601	Sustainable Environmental Management (3)		
or ENTMLGY/PLANT PATH 5604	Capstone Problem-Based Studies Plant Health (2)	2-3	
Required Courses from other departments:			*11*
MOL GEN 500	General Genetics	3	
EEOB 503.01	Intro to Ecology, lecture	3	
MATH 151	Calculus 1 5		
Required electives, select one applied course from the following list:			*2-3*
ENTMLGY 4601	General Insect Pest Management	2	
ENTMLGY 4602	Landscape Entomology	2	
ENTMLGY 4603	Agricultural Entomology	2	
ENTMLGY 4604	Urban Entomology	2	
ENTMLGY 4605	Public Health Entomology	2	
ENTMLGY 4606	Forensic Entomology	2	
ENTMLGY 4607	Veterinary Entomology	2	
ENTMLGY 5110	Ecology and Management of Pathogens and Insects Affecting Trees in Forest and Urban Environments	3	
Required electives, select minimum of 9 credit hours from the list below or additional options from the list above:			*9*
ENTMLGY 3330 or 4440H	Social Insects	3	
ENTMLGY 5120	Aquatic Insect Biology & Ecology	4	
ENTMLGY 5130	Field Insect Taxonomy	3	
ENTMLGY 5420	Insect Behavior	3	
ENTMLGY 5500	Biological Control of Insects	3	
ENTMLGY 5800	Pesticide Science	3	
ENTMLGY 6310	Insect Physiology & Molecular Biology	3	
ENTMLGY 6410	Insect Ecology & Evolutionary Processes	3	
ENTMLGY 6660	Principles & Applications of Integrated Pest Management	3	
ENTMLGY 6701	Insect Biodiversity Techniques	3	
ENTMLGY 4683 or 4683H	Research	1-5	
Electives related to the major:			*7-9*
Additional courses from those listed above, OR upper level courses in Evolution, Ecology, & Organismal Biology; Molecular Genetics; Plant Cellular & Molecular Biology; Plant Pathology; Microbiology; Horticulture & Crop Science; Environment & Natural Resources; and similar fields.			

Quarter advising sheet:

ENTOMOLOGY--QUARTERS
Effective As Soon As Possible

All students must complete two International Issues courses one of which must be a non-western or global course designated with an asterisk (*). The other course may be another non-western or global course or a western (non-US) course designated with a diamond. Check ✓ when completed: *____, *or ◆ ____.

FAES 100 or USAS 100, etc.		**1**
English 110.01		**5**
Second Writing Course (See approved CFAES GEC list)		**0-5**
Agr Comm 390 or Comm 321		**5**
Math 150 and 151		**10**
Natural Sciences		**25**
Biology 113, 114	10	
Chemistry 121, 122, 123	15	
Social Science		**15**
AED Econ 200 or Econ 200	5	
Rural Soc 105 or Soc 101	5	
Additional Social Science (See approved CFAES GEC list)	5	

History (See approved CFAES GEC list)		**5**
Arts and Literature (See approved CFAES GEC list)		**10**
Literature	5	
Visual/Performing Arts	5	
Contemporary Issues (See approved CFAES GEC list)		**5**
Major (See below)		**55-65**
Internship (ENTOMOLOGY 489)		**3-5**
Free Electives		**4-22**
TOTAL		**183**

Major — 55-65

Required:

Data Analysis	AED Econ 205 or AEE (was Agr Educ) 387 or Anim Sci 260 or H&CS 260 or ENR 222 or Stat 145		5
ENTOMOL	460 or 462	Economic Entomology and Insect Pest Mgt. or Economic Entomology for Turf, Ornamentals, and Greenhouses	4-5
ENTOMOL	500	General Entomology	5
ENTOMOL	795	Special Topics in Entomology	1-3
EEOB	503.01	Introduction to Ecology: Lecture	4
ENR 567 or EEOB 440 or PLNT PTH 603			5
MOL GEN	500	General Genetics	5

Select 7-10 hours from the following:

ENTOMOL	333 or 444H	Social Insects	
ENTOMOL	461	Forest Entomology	5
ENTOMOL	611	Field Entomology	5
ENTOMOL	612	Aquatic Entomology	5
ENTOMOL	631	Insect Physiology	5
ENTOMOL	641	Insect Ecology	3
ENTOMOL	642	Insect Behavior	4
ENTOMOL	650	Biological Control of Arthropod Pests	4
ENTOMOL	660	Advanced Economic Entomology	5
ENTOMOL	661	Medical Entomology	5
ENTOMOL	693	Individual Studies	1-10
ENTOMOL	694	Group Studies	2-5

Electives in Major Select at least 13-23 credit hours from the following for a total of 55-65 hours in the major:
Additional Entomology courses from above or:

ENR	300.01	Soil Science	3
EEOB	232	Introductory Physiology	5
EEOB	400 or 400H	Evolution	5
EEOB	405.01, 405.02	Diversity and Systematics of Organisms	6
EEOB	410	Animal Form and Function	4
EEOB	415	Principles of Animal Cellular and Developmental Biology	4
EEOB	440	Introductory Ethology	5
HCS	300	General Plant Biology	5
HCS	422	Principles of Weed Science	4
MICROBIOL	509	Basic and Practical Microbiology	5
MICROBIOL	520	General Microbiology I	5
PLNT BIO	300	General Plant Biology	5
PLNT BIO	436	Introductory Plant Physiology	5
PLNT PTH	401	General Plant Pathology	5
PLNT PTH	602	Plant-Microbe Interactions	3
PLNT PTH	603	Plant Disease Management	5

Math 152 and Sciences (Organic Chemistry) recommended for those who plan to apply for graduate school or professional school. 10/28/2010

Transition policy:

Given that the Department of Entomology offers only one major in the quarter system and will offer only one major in the semester system, it is likely that most students who start in this major will continue to pursue this major during the transition. Most students that are currently juniors or seniors with a major in Entomology are likely to complete their degree under the quarter system with the previous requirements defined by the College of Biological Sciences. Most students that are currently freshmen or sophomores with a major in Entomology are likely to complete their degree under the semester system with the new requirements in the CFAES as defined in this document. The required number of credit hours for graduation will be reduced from 183 to 121, and credits for courses taken under quarters will be adjusted accordingly using a conversion factor of 0.667. Courses that are a one-for-one switch from quarter to semester versions should be relatively easy to incorporate into a student's program. If the course plan had included quarter courses that are dropped or significantly altered during the conversion, or semester versions that will not be available before the student's projected graduation date, then suitable semester alternatives will be substituted. The substitutions will be based on course content and meeting the needs of the student's career path and time to graduation.

In general, transition students are being encouraged to complete the quarter system GEC categories that have no or few options (e.g. most sciences, social science) before the conversion. They are also being encouraged to take required courses in the major for the same reason. The categories with the most options (some semester GE categories and electives in the major) are likely to provide the most flexibility in course choice and scheduling under semesters. Sample course plans for transition students are shown on the following three pages.

The University Pledge to Undergraduate Students (copied below) will be followed by the faculty advisors in Entomology. Advisors will encourage their advisees to be proactive in getting help with scheduling courses before and after the conversion to make sure progress toward graduation is not impeded as long as the students follow a course of action that promotes progress. The course of action includes but is not limited to: a timely declaration of major and minor, taking courses in proper sequence, taking and successfully completing a sufficient number of hours each term, and maintaining a grade point average above 2.0 in the major and minor. Transition students (those who start under quarters and will finish under semesters) will receive information regarding the semester conversion via their academic advisors. This is intended to keep them informed of the process, the progress being made in undergraduate programs and course approval, as well as what they should be doing to make the transition as seamless as possible.

University Pledge to Undergraduate Students:

In planning and implementing its conversion from quarters to semesters for summer 2012, The Ohio State University is committed to protecting the academic progress of students. Students should find that the shift from quarters to semesters does not disrupt progress toward their degrees if they

1. decide on their major and degree within a time compatible with four-year graduation;
2. meet the standards for progress defined by their academic unit and continue to complete appropriate course loads successfully; and
3. actively develop and follow academic plans in consultation with their academic advisors.

Students completing a quarter-plus-semester degree program will receive approximately the same amount of instruction, and the changes to the calendar and to courses should only improve the quality of programs. Full-time tuition (general and instructional fees) for an academic year under semesters will not cost more than what tuition would have cost for that same year under quarters, and the change should not adversely affect students' financial aid.

To ensure that the conversion will not harm students' progress, academic units will continue to provide intentional, purposeful advising. Academic advisors will understand how the changes in courses and curricula may affect students' degree programs, will know where and how programs can be flexible, and will be prepared to assist students in planning their remaining semesters to graduation. Good planning around a student's major will be particularly important, and the university will provide that support to students who begin their academic career under quarters and complete it under semesters.

Students will vary considerably in their academic progress, and each student's plan for completing degree requirements will need to be determined individually. Every student will be responsible for getting and using the advice essential to assure progress toward his or her degree. Advising is a joint endeavor, and we are confident that students and their advisors, working together, can develop effective plans leading to timely graduation as the university converts to semesters.

Sample 4-year course plan for Entomology majors entering OSU as freshmen in autumn 2010

Track for Applied Pest Management

First year (quarters): 45 credits total (= 30 semester credits)

autumn		winter		spring	
FAES 100 (Survey)	1	BIO 113 (Bio Sci 1)	5	BIO 114 (Bio Sci 2)	5
MATH 148 (Algebra & Trig.)	4	CHEM 122 (General Chem 2)	5	CHEM 123 (General Chem 3)	5
CHEM 121 (General Chem 1)	5	ENGLISH 110.01 (Composition)	5	MATH 150 (Elem. Functions)	5
RUR SOC 105 (Rural Soc.)	5				
Total	15	Total	15	Total	15

Second year (quarters): 45 credits total (= 30 semester credits)

autumn		winter		spring	
ENTOMOL 500 (General Ent.)	5	ENTOMOL 460 (Econ. Ent.)	5	History GEC course	5
MATH 151.03 (Calculus 1)	5	HCS 260 (Data Analysis)	5	ENR 367 or other 2nd writing	5
AED Econ 200 (Economics)	5	ENR 203 (Society and Natural		Elective	4
		Resources) or other Soc. Sci.	5	ENTOMOL 699 (Research)	1
Total	15	Total	15	Total	15

Third year (semesters): 30 credits total

autumn		spring	
ENTMLGY 3330 (Social Insects)	3	ENTMLGY 5800 (Pesticide Science)	3
EEOB 503.01 (Ecology)	3	MOL GEN 500 (Genetics)	3
AGR COMM 390 (Oral Expression)	3	Literature GEC course	3
Arts GEC course	3	Electives	5
HCS 422 (Weed Science)	3	ENTMLGY 4683 (Research)	1
Total	15	Total	15

Fourth year (semesters): 31 credits total

Summer/autumn		autumn		spring	
ENTMLGY 4191		ENTMLGY 5500 (Biological Control)	3	ENTMLGY 5601 (capstone)	3
(Internship)	2	ENTMLGY 5130 (Field Insect Taxonomy)	3	ENTMLGY 5420 (Insect Behavior)	3
		PLANT PATH 3001 (General PP lecture)	2	PLANT PATH 4597 (Societal Issues)	3
		PLANT PATH 3002 (General PP lab)	2	Electives	5
		Electives	3	ENTMLGY 4683 (Research)	1
		ENTMLGY 4683 (Research)	1		
Total	2	Total	14	Total	15

4-year total = 121 credits

Track for Pre-Graduate Studies or Pre-Medical or Pre-Veterinary School

First year (quarters): 46 credits total (= 31 semester credits)

autumn		winter		spring	
FAES 100 (Survey)	1	BIO 113 (Bio Sci 1)	5	BIO 114 (Bio Sci 2)	5
CHEM 121 (General Chem 1)	5	CHEM 122 (General Chem 2)	5	CHEM 123 (General Chem 3)	5
MATH 150 (Elementary Functions)	5	ENGLISH 110.01 (Composition)	5	MATH 151.03 (Calculus 1)	5
SOC 102 (Intro Sociology)	5				
Total	16	Total	15	Total	15

Second year (quarters): 44 credits total (= 29 semester credits)

autumn		winter		spring	
CHEM 251 (Organic Chem. 1)	4	CHEM 252 (Organic Chem. 2)	4	CHEM 253 (Organic Chem. 3)	4
ENTOMOL 500 (General Ent.)	5	CHEM 254 (Organic Lab. 1)	3	CHEM 255 (Organic Lab. 2)	3
MATH 152.03 (Calculus 2)	5	ENR 203 (Society and Natural		Arts GEC course	5
		Resources) or other Soc. Sci.	5	AGR COMM 390 (Oral Expression)	3
		Literature GEC course	3		
Total	14	Total	15	Total	15

Third year (semesters): 31 credits total

autumn		spring	
PHYSICS 111 (General Physics 1)	4?	PHYSICS 112 (General Physics 2)	4?
EEOB 503.01 (Ecology)	3	ENTMLGY 4601 (Pest management)	2
HCS 260 (Data Analysis)	3	MOL GEN 500 (Genetics)	3
ENR 367 or other 2nd writing course	3	Electives	5
ENTMLGY 3330 (Social Insects)	3	ENTMLGY 4683 (Research)	1
Total	16	Total	15

Fourth year (semesters): 30 credits total

Summer/autumn		autumn		spring	
ENTOMOL 4191		ENTMLGY 5500 (Biological Control)	3	ENTMLGY 5601 (capstone)	3
(Internship)	2	ENTMLGY 5130 (Field Insect Taxonomy)	3	ENTMLGY 5420 (Insect Behavior)	3
		Econ 200 (Economics)	3	PLANT PATH 4597 (Societal Issues)	3
		History GEC course	3	Electives	3
		Electives	2	ENTMLGY 4683 (Research)	1
		ENTMLGY 4683 (Research)	1		
Total	2	Total	15	Total	13

4-year total = 121 credits

Sample course plan for Entomology majors entering OSU as freshmen in autumn 2011

Track for Applied Pest Management

First year (quarters): 45 credits total (= 30 semester credits)

autumn		winter		spring	
FAES 100 (Survey)	1	BIO 113 (Bio Sci 1)	5	BIO 114 (Bio Sci 2)	5
CHEM 121 (General Chem 1)	5	CHEM 122 (General Chem 2)	5	CHEM 123 (General Chem 3)	5
MATH 148 (Algebra & Trig.)	4	ENGLISH 110.01 (Composition)	5	MATH 150 (Elem. Functions)	5
RUR SOC 105 (Rural Soc.)	5				
Total	15	Total	15	Total	15

Second year (semesters): 29 credits total

autumn		spring	
ENTMLGY 3000 (General Ent.)	3	ENTMLGY 4601 (Pest Mgmt.)	2
MATH 151.03 (Calculus 1)	5	HCS 260 (Data Analysis)	3
AED Econ 200 (Economics)	3	History GEC course	3
ENR 203 (Society and Natural Resources) or other Soc. Sci.	3	ENR 367 or other 2nd writing course	3
		Elective	3
		ENTMLGY 4683 (Research)	1
Total	14	Total	15

Third year (semesters): 30 credits total

autumn		spring	
ENTMLGY 3330 (Social Insects)	3	ENTMLGY 5800 (Pesticide Science)	3
EEOB 503.01 (Ecology)	3	MOL GEN 500 (Genetics)	3
AGR COMM 390 (Oral Expression)	3	Literature GEC course	3
Arts GEC course	3	Electives	5
HCS 422 (Weed Science)	3	ENTMLGY 4683 (Research)	1
Total	15	Total	15

Fourth year (semesters): 32 credits total

Summer/autumn		autumn		Spring	
ENTMLGY 4191		ENTMLGY 5500 (Biological Control)	3	ENTMLGY 5601 (capstone)	3
(Internship)	2	ENTMLGY 5130 (Field Insect Taxonomy)	3	ENTMLGY 5420 (Insect Behavior)	3
		PLANT PATH 3001 (General PP lecture)	2	PLANT PATH 4597 (Societal Issues)	3
		PLANT PATH 3002 (General PP lab)	2	Electives	6
		Electives	3	ENTMLGY 4683 (Research)	1
		ENTMLGY 4683 (Research)	1		
Total	2	Total	14	Total	16

4-year total = 121 credits

Track for Pre-Graduate Studies or Pre-Medical or Pre-Veterinary School

First year (quarters): 46 credits total (= 30 semester credits)

autumn		winter		spring	
FAES 100 (Survey)	1	BIO 113 (Bio Sci 1)	5	BIO 114 (Bio Sci 2)	5
CHEM 121 (General Chem 1)	5	CHEM 122 (General Chem 2)	5	CHEM 123 (General Chem 3)	5
MATH 150 (Elementary Functions)	5	ENGLISH 110.01 (Composition)	5	MATH 151.03 (Calculus 1)	5
SOC 102 (Intro Sociology)	5				
Total	16	Total	15	Total	15

Second year (semesters): 29 credits total

autumn		spring	
CHEM 251 (Organic Chem. 1)	4?	CHEM 252 (Organic Chem. 2)	4?
CHEM 254 (Organic Lab. 1)	3?	CHEM 254 (Organic Lab. 2)	3?
ENTMLGY 3000 (General Ent.)	3	ENR 203 (Society and Natural Res.) or other Soc. Sci	3
MATH 152.03 (Calculus 2)	5	Arts GEC course	3
		ENTMLGY 4683 (Research)	1
Total	15	Total	14

Third year (semesters): 30 credits total

autumn		spring	
PHYSICS 111 (General Physics 1)	4?	PHYSICS 112 (General Physics 2)	4?
EEOB 503.01 (Ecology)	3	ENTMLGY 4601 (Pest management)	2
HCS 260 (Data Analysis)	3	AGR COMM 390 (Oral Expression)	3
ENR 367 or other 2nd writing course	3	MOL GEN 500 (Genetics)	3
ENTMLGY 3330 (Social Insects)	3	Literature GEC course	3
Total	16	Total	15

Fourth year (semesters): 32 credits total

Summer/autumn		autumn		spring	
ENTMLGY 4191		ENTMLGY 5500 (Biological Control)	3	ENTMLGY 5601 (capstone)	3
(Internship)	2	ENTMLGY 5130 (Field Insect Taxonomy)	3	ENTMLGY 5420 (Insect Behavior)	3
		Econ 200 (Economics)	3	PLANT PATH 4597 (Societal Issues)	3
		History GEC course	3	Electives	5
		Electives	2	ENTMLGY 4683 (Research)	1
		ENTMLGY 4683 (Research)	1		
Total	2	Total	15	Total	15

4-year total = 121 credits

Sample course plan for Entomology majors entering OSU as freshmen in autumn 2012 and later

Track for Applied Pest Management

First year (semesters): 32 credits total

autumn		spring	
FAES 100 (Survey)	1	BIO 114 (Bio Sci 2)	4
CHEM 121 (General Chem 1)	4?	CHEM 123 (General Chem 3)	4?
BIO 113 (Bio Sci 1)	4	MATH 1150 (Pre-Calculus)	5
MATH 1148 (College Algebra)	4	ENGLISH 110.01 (Composition)	3
RUR SOC 105 (Rural Soc.)	3		
Total	16	Total	16

Second year (semesters): 29 credits total

autumn		spring	
ENTMLGY 3000 (General Ent.)	3	ENTMLGY 4601 (Pest Mgmt.)	2
MATH 151.03 (Calculus 1)	5	HCS 260 (Data Analysis)	3
AED Econ 200 (Economics)	3	History GEC course	3
ENR 203 (Society and Natural Resources) or other Soc. Sci	3	ENR 367 or other 2nd writing course	3
		Elective	3
		ENTMLGY 4683 (Research)	1
Total	14	Total	15

Third year (semesters): 30 credits total

autumn		spring	
ENTMLGY 3330 (Social Insects)	3	ENTMLGY 5800 (Pesticide Science)	3
EEOB 503.01 (Ecology)	3	MOL GEN 500 (Genetics)	3
AGR COMM 390 (Oral Expression)	3	Literature GEC course	3
Arts GEC course	3	Electives	5
HCS 422 (Weed Science)	3	ENTMLGY 4683 (Research)	1
Total	15	Total	15

Fourth year (semesters): 30 credits total

Summer/autumn		autumn		spring	
ENTMLGY 4191 (Internship)	2	ENTMLGY 5500 (Biological Control)	3	ENTMLGY 5601 (capstone)	3
		ENTMLGY 5130 (Field Insect Taxonomy)	3	ENTMLGY 5420 (Insect Behavior)	3
		PLANT PATH 3001 (General PP lecture)	2	PLANT PATH 4597 (Societal Issues)	3
		PLANT PATH 3002 (General PP lab)	2	Electives	4
		Electives	3	ENTMLGY 4683 (Research)	1
		ENTMLGY 4683 (Research)	1		
Total	2	Total	14	Total	14

4-year total = 121 credits

Track for Pre-Graduate Studies or Pre-Medical or Pre-Veterinary School

First year (semesters): 30 credits total

autumn		spring	
FAES 100 (Survey)	1	BIO 114 (Bio Sci 2)	4
CHEM 121 (General Chem 1)	4?	CHEM 123 (General Chem 3)	4?
BIO 113 (Bio Sci 1)	4	MATH 1151 (Calculus 1)	5
MATH 1150 (Pre-Calculus)	5	ENGLISH 110.01 (Composition)	3
Total	14	Total	16

Second year (semesters): 30 credits total

autumn		spring	
CHEM 251 (Organic Chem. 1)	4?	CHEM 252 (Organic Chem. 2)	4?
CHEM 254 (Organic Lab. 1)	3?	CHEM 254 (Organic Lab. 2)	3?
ENTMLGY 3000 (General Ent.)	3	ENTMLGY 4601 (Pest management)	2
MATH 152.03 (Calculus 2)	5	ENR 203 (Society and Natural Res.) or other Soc. Sci	3
		SOC 102 (Intro Sociology)	3
Total	15	Total	15

Third year (semesters): 30 credits total

autumn		spring	
PHYSICS 111 (General Physics 1)	4?	PHYSICS 112 (General Physics 2)	4?
EEOB 503.01 (Ecology)	3	AGR COMM 390 (Oral Expression)	3
HCS 260 (Data Analysis)	3	MOL GEN 500 (Genetics)	3
ENR 367 or other 2nd writing course	3	Literature GEC course	3
ENTMLGY 3330 (Social Insects)	3	ENTMLGY 4683 (Research)	1
Total	16	Total	14

Fourth year (semesters): 31 credits total

Summer/autumn		autumn		spring	
ENTMLGY 4191 (Internship)	2	ENTMLGY 5500 (Biological Control)	3	ENTMLGY 5601 (capstone)	3
		ENTMLGY 5130 (Field Insect Taxonomy)	3	ENTMLGY 5420 (Insect Behavior)	3
		Econ 200 (Economics)	3	PLANT PATH 4597 (Societal Issues)	3
		History GEC course	3	Arts GEC course	3
		ENTMLGY 4683 (Research)	1	Electives	3
				ENTMLGY 4683 (Research)	1
Total	2	Total	13	Total	16

4-year total = 121 credits

Curriculum map for undergraduate Entomology courses: rated as **B** for beginning level, **M** for intermediate level, **A** for advanced level.

LEARNING OBJECTIVE >>> COURSE V V	1. Students will achieve an understanding of insect biology at the molecular, biochemical, organismal, population, community, and ecosystem levels.	2. Students will achieve a holistic framework for understanding sustainability in ways that cross disciplinary boundaries from entomology to other natural, physical, economic and social sciences.	3. Students will achieve a conceptual understanding of human and natural ecosystems through the lens of insect science.	4. Students will achieve an appreciation of the threats and ecosystem services attributed to insects and how these can shape scientific discovery, policy formation, and resource management decisions.	5. Students will achieve an understanding of the history and the nature of science including hypothesis testing as required for scientifically literate populace.	6. Students will achieve an ethical framework for inquiry and action in science and society that includes entrepreneurship and business; collaboration, political and community engagement; and environmental stewardship.	7. Students will achieve a demonstrated ability to apply a set of critical thinking tools to issue-based cross-disciplinary work and to communicate their thinking and analysis.
ENT 1101	B	B	B	B	B	-	-
ENT 1111	B	B	B	B	B	-	-
ENT 1260	B	B	B	B	B	B	B
ENT 2101	B	B	B	B	B	B	B
ENT 2200	B	M	B	M	B	M	B
ENT 3000	B	B	B	B	B	B	B
ENT 3330	B	B	B	B	B	B	B
ENT 4600	B	-	B	B	-	-	-
ENT 4601	B	B	B	M	B	B	B
ENT 4602	-	B	M	M	-	B	B
ENT 4603	B	B	B	M	B	B	B
ENT 4604	B	-	B	M	B	B	B
ENT 4606	B	B	B	B	B	B	B
ENT 4607	B	B	B	M	B	B	M
ENT 4191	M	M	M	-	-	M	M
ENT 4200	M	M	M	M	B	M	M
ENT 4440H	B	B	B	B	B	B	B
ENT 4683	A	M	A	M	A	M	A
ENT 5110	A	A	A	A	M	-	M
ENT 5120	A	M	A	A	M	M	M
ENT 5130	A	-	-	-	M	M	M
ENT 5420	A	-	A	M	M	-	M
ENT 5500	A	M	A	A	A	M	A
ENT 5601	M	A	M	M	M	M	A
ENT 5604	M	A	M	M	M	M	A
ENT 5605	B	B	B	M	B	B	M
ENT 5623	A	-	-	B	-	-	B
ENT 5800	B	M	M	A	M	A	A

11/19/2010