From: Leslie Alexander [mailto:alexander.282@gmail.com]
Sent: Wednesday, April 27, 2011 3:51 PM
To: Jill Pfister; Sarah Lang; Andrew Blasenak
Subject: Next set of questions

Dear Jill,

I hope all is well.

As I mentioned earlier, I have a series of questions for you regarding several of the FAES programs. They are listed below, and we appreciate your help very much. I have copied Andrew and Sarah on this email in case they have anything to add.

Best, Leslie

Leadership Studies minor
1. Can you add an explicit statement to the transition plan that reiterates your commitment to the university's policy that no student will be negatively impacted by the process of semester conversion?

2. Can you explain the rationale behind requiring 12 credit hours at 3000 level or above? It seems like this may cause a conflict with the number of 2000 level courses

3. Is there a specific transition policy just for this minor?

4. Can you explain the rationale for not allowing particular majors to take this minor?

Agricultural Communication minor
1. Can you add an explicit statement to the transition plan that reiterates your commitment to the university's policy that no student will be negatively impacted by the process of semester conversion?

2. Why are only 6 credit hours required at the 3000 level when there are 12 credit hours required for Leadership Studies?

3. Is there a specific transition policy just for this minor? Is there a designated advisor for students to consult with?

Plant Health Management, BS
1. Is the CFAES Gen Ed list different from the list approved by ASC? If so, can you give us a copy of the CFAES list?

2. You mention that PLNTPTH 587 will be available as a Contemporary Issues course--is this a new GEC that you are offering? If so, has it been approved by ULAC?

3. What if a student tests out of Math 148/150? Are they still required to take another math course, and if so which one?

Plant Pathology BS

1. Is the CFAES Gen Ed list different from the list approved by ASC? If so, can you give us a copy of the CFAES list?

2. What if a student tests out of Math 148/150? Are they still required to take another math course, and if so which one?

3. There seem to be a lot of question marks on the advising sheet. Have you had any further conversations with the other units about the exact credit hours?

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

From: **Jill Pfister** <pfister.1@osu.edu>
Date: Mon, May 2, 2011 at 8:52 AM
Subject: RE: Next set of questions
To: Leslie Alexander <alexander.282@gmail.com>, Sarah Lang <lang.279@osu.edu>, Andrew Blasenak <blasenak.1@osu.edu>

Let me take some time to address these questions.

CFAES is committed to the transition of students and the University policy that no student will be negatively impacted by the process of semester conversion. To emphasize this I am holding four workshops this quarter for faculty advisers and student support staff. These workshops will be repeated in June and early September with the hopes of catching all faculty and staff working with students. The workshops are focused on:

1. An update of where we are in the Q2S approval system, General Ed curriculum, review of all majors in the college, review of all minors administered by the college. First workshop was held this past Friday and 25 attended.

2. AdvisingConnect – Training for use as a tool in advising – scheduled for this Friday

3. Degree Audits and there use in Q2S – scheduled for May 20

4. Advising the Transition Student – scheduled for June 3

Each major prepared four year plans, one year semesters and three years quarters, two years semester and two years quarters etc. We start working with students about minors as early as orientation. It is emphasized again in FAES 100. Students are asked to declare the minor by the end of the second year so they have enough time to plan out the courses in the minor. Most of the minors are converted so there should be no issues with completion but when there is considerable change the adviser and myself will

work with the student so as not to cause a delay in graduation as long as the student is holding up his or her responsibility toward completing the degree. If the minor is not declared until the last year or last quarter it is difficult to complete in that short period of time.

All minors submitted by CFAES should have a statement similar to "At least six hours must be at the 3000 level or above". ASC required that this statement be included in each minor. The leadership minor is incorrect and we will correct it. It should be six hours, not 12.

CFAES has a philosophy about selecting minors which overlap with majors. If there is too much duplication the minor is excluded. For example, an Animal Sciences student can not select an Animal Nutrition minor. Many of the nutrition courses are in the major. The Animal Nutrition minor is designed for students outside of the Animal Sciences major. The CFAES faculty Committee on Academic Affairs recently finalized the minors which are excluded from certain majors and the chart is attached. It is easier to view the College as a whole.

The template we used for the BS in AGR is similar to that of ASC. The only difference is the math requirement which is not a change from what we have had previously. I have attached the Gen Ed that I submitted. It is a chart of quarters compared to semesters. We also are maintaining the Contemporary Issues requirement for the B.S. in Agr. All of this is discussed in my cover letter. Our college has offered several Contemporary Issues and this will continue. Plant Path 597 is not a new course. The list of Gen Ed courses we are offering is in the attached table. This is in my cover letter also.

In the past CFAES has required all students to have credit for a college math course on the transcript. If they earn EM credit that is fine but they must have credit for at least he minimum math requirement for the major. If they place into level L they will need to take Math 150 or 151 course. If they place into level M they take Math 150 and so on. Testing level does not place a student out of college math.

The Plant Path and Plant Health mgt majors sheets have been revised now that we know more of the numbers. The revised sheets are attached.

I think I have addressed all your questions. Let me know if you have any further questions.

Jill A. Pfister

Jill A. Pfister
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College of FAES/BS in Agriculture Quarter and Semester Comparison of General Education Requirements							
General Education Curriculum (GEC) Quarter-Hour Requirements				General Education (GE) Semester-Hour Requirements (Effective SU12)			
Course Type	**# of Courses**	**Hours/ Units**	**Notes**	**Course Type**	**# of Courses**	**Hours/ Units**	**Notes**
Writing & Related Skills	3	15	Level 1 & 2, and Oral Expression course	Writing	3	9	Level 1 &2, oral expression
Arts and Humanities	2	10	1 Literature and 1 Visual/Performing Arts	Literature	1	3	
				Arts	1	3	
Quantitative & Logical Analysis (Includes data analysis)	1	4	Math 130 or 148	Math	1	4	Minimum of Math 130 or 148
				Data Analysis	1	3	
Natural Science Biological Physical	5	25	At least 1 bio, 1 phys, 1 lab course, and sequence (Math 131 & 151 additional options)	Science Biological Physical	2	8-10	Biological science with lab Physical Science with lab
Historical Study	1	5		Historical Study	1	3	
Social Science	3	15	Rural Soc 105 or Soc 101 & AED Econ 200 or Econ 200	Social Science	2	6	Rural Soc 1500 or Soc 101 AED Econ 2001 or Econ 2001
				Culture & Ideas or Historical Study	1	3	
Additional Breadth Selections	0	0		Open Options[3]	2	6-10	Open Option 1: Additional Natural Science (Math 131 or 151 serves as an option) Open Option 2: Additional Natural Science or Social Science depending on major
Foreign Language	0	0		Language proficiency level	0	0	
Diversity Experiences Social Diversity International Issues[1]	 1 2	0-15	May overlap with another category	Social Diversity in the US	1	3	May overlap with another category (Rural Soc 1500 or Soc 101)
Issues of the Contemporary World	1	5		Global Studies	2	6	May overlap with another category
	-			Contemporary Issues or College wide Capstone	1	3	
Other[2]		23-30		Other[2]		13-17	
	19	**102-124**		**Total**	**19**	**73-83**	

International Issues: At least one non-western course and second course can be non-western or western (non-US)

[2]Other: Degree requires internship (3-5 hrs) and minor (20-25 hrs)

[2]Other: Degree requires internship (1-2) and minor or minor equivalent (12-15)

GENERAL EDUCATION COURSES
COLLEGE OF FOOD, AGRICULTURAL, AND ENVIRONMENTAL SCIENCES
December, 2010

Course No.	Course Title	CR. HRS.	GEC Category
NEW COURSES			
PLNTPTH 2000	Molds, Mushrooms, and Man	3	Natural Science
COMLDR 2550	The Land Grant Influence	3	Historical Study
ENTMLGY 1111	Biology of Insects, Animals & Fungi Affecting Buildings	4	Natural Science
REVISED COURSES			
ENTMLGY 1101	Insect Biology	4	Natural Science
ENTMLGY 2101	Insects & Human Affairs: Pests, Plagues, Poisons & Politics	3	Cultures & Ideas
HCS 2201E	Ecology of Managed Plant Systems – Honors Embedded	4	Natural Science
HCS 2201	Ecology of Managed Plant Systems	4	Natural Science
HCS 2202E	Form and Function in Cultivated Plants – Honors Embedded	4	Natural Science
HCS 2202	Form and Function in Cultivated Plants	4	Natural Science
HCS 2260	Data Analysis and Interpretation for Decision Making	3	Data Analysis
ENR 2367	Communicating Contemporary Environmental and Natural Resources Issues	3	2nd Writing Course
ENR 3000 & 3001	Soil Science (lecture and lab)	3	Natural Science
CONVERTED COURSES – SEMESTER EQUIVALENT			
ENR 1010	Soils in our Environment	4	Natural Science
RURLSOC 1500	Introduction to Rural Sociology	3	Social Science – O&P
ENR 2000	Natural Resources Data Analysis	3	Data Analysis
AEDECON 2001H	Principles of Food and Resource Economics - Honors	3	Social Science – HNER
AEDECON 2001	Principles of Food and Resource Economics	3	Social Science – HNER
AEDECON 2005	Data Analysis for Agribusiness and Applied Economics	3	Data Analysis
ENR 2100	Introduction to Environmental Science	3	Natural Science
ENR 2155	Energy and Environment	4	Natural Science
FDSCTE 2200	The Science of Food	3	Natural Science
HCS 2200	Art and Science of Sustainable Plant Production	3	Natural Science
ANIMSC 2260	Data Analysis and Interpretation for Decision Making	3	Data Analysis
ENR 2300	Society and Natural Resources	3	Social Science – HNER
ANIMSC 2367	Animals in Society	3	2nd Writing Course/Social Science – HNER
ANIMSC 3140	Principles of Animal Systems Physiology	3	Natural Science
AGRCOMM 2367	Agricultural Issues in Contemporary Society	3	2nd Writing Course/Social Diversity
AEDECON 2580	Feast or Famine: The Global Business of Food	3	Social Science – HNER and International issues
ENTMLGY 3330	Social Insects	3	
ENR 3470	Religion and Environmental Values in America	3	Social Science
COMLDR 3535S	Toward Cultural Proficiency	3	Culture and Ideas
COMLDR 3537	Data Analysis in the Applied Sciences	3	Data Analysis
RURLSOC 3580	Social Groups in Developing Societies	3	Social Science I&G and International Issues
AEDECON 3597.01H	Problems and Policies in World Population, Food, and Environment-Honors	3	Contemporary Issues
AEDECON 3597.01	Problems and Policies in World Population, Food, and Environment	3	Contemporary Issues
FDSCTE 3597.01	Alcohol and Society	3	Contemporary Issues
FDSCTE 3597.02	Food and Health Controversies in the 21st Century	3	Contemporary Issues
PLNTPTH 3597	Societal Issues: Pesticides, Alternatives, and the Environment	3	Contemporary Issues
ANIMSC 3597	Issues Concerning the Use of Animals by Humans	3	Contemporary Issues
ENR 4000	Environmental and Natural Resources Policy	3	Social Science – O&P

FAES 100 or USAS 100, etc	1	Social Science 1 (Rural Soc 1500 or Soc 101)	3
Writing Level 1 (ENG 110)	3	Social Science 2 (AEDECON 2001 or Econ 2001)	3
Writing Level 2 (from list)	3	Historical Study	3
Agr Comm 3130 or Comm 321	3	Culture & Ideas or Historical Study	3
Math 1148 or 1150	4	Literature	3
Data Analysis (from list)	3	Art	3
Biology 1101, 1113, 1115H, Entomol 1101, HCS 2201, or MolGen 1101	5	Contemporary Issues/College Capstone	3
Chemistry 1210 or 1910H	5	Minor	12-15
Chemistry 1220 or 1920H	4	Major	36
Biology 1114, Entomol 2102, MolGen 3300, HCS 2202	3-5	Internship/Experiential Learning (PLNTPTH 4191)	2
		Electives	10-17
		TOTAL	121

Major Requirements (24-27 credit hours) *(23-24 credit hours if student has taken ENTMLGY 1101):*

ENR 3000 (lecture) and ENR 3001 (lab): Soil Science	4
*HCS 2201: Ecology of Managed Plant Systems OR H&CS 2202: Form and Function of Cultivated Plants	3
HCS 5422: Principles of Weed Ecology and Management	3
MOLGEN 3436: Introductory Plant Physiology	3
PLNTPTH 5603: Plant Disease Management	3
PLNTPTH/ENTMLGY 5604: Capstone Course: Problem-Based Studies in Plant Health	2
Also select one of the following core plant pathology courses (required):	
PLNTPTH 3001: General Plant Pathology- lecture and PLNTPTH 3002: General Plant Pathology- lab	4
PLNTPTH 6001: Advanced Plant Pathology	3
Also select one of the following core entomology courses:	
(*Required only if student did not take ENTMLGY 1101 as BIO SCI requirement):*	
ENTMLGY 4600: Introduction to Insect Science	1
ENTMLGY 3000: General Entomology	3
Also select one of the following entomology support courses (required):	
ENTMLGY 4601: General Insect Pest Management	2
ENTMLGY 4602: Urban Landscape and Greenhouse Entomology	2
ENTMLGY 4603: Agricultural Entomology	2

Electives *(enough to bring total in major to 36 hours realizing if student took HCS 2201 or ENTMLGY 1101 as GE, these hours will not count in major)*

BIOCHEM 2210: Elements of Biochemistry	4	HCS 4411: Grain, Oilseed, and Fiber Crops	3
BIOCHEM 4511: Introduction to Biological Chemistry	4	HCS 5412: Forages, Grasslands, and Prairies	3
CHEM 2310: Introductory Organic Chemistry	4	HCS 5450: Vegetable Crop Production and Physiology	3
CHEM 2510: Organic Chemistry I	3	HCS 5460: Fruit Crop Physiology and Production	3
CHEM 2520: Organic Chemistry II	4	MICROBIOL 4090: Basic and Practical Microbiology	4
EEOB 400: Evolution	3	MICROBIOL 5000: General Microbiology	5
EEOB 503.01: Introduction to Ecology	3	MICROBIOL 5081: Microbial Genetics	3
ENR 5270: Soil Fertility	3	MOLGEN 4500: General Genetics	3
ENR 5272: Urban and Sports Turf Soils	3	PLNTPTH 5010: Phytobacteriology	2
ENTMLGY 3330 H4440: Social Insects	3	PLNTPTH 5020: Virology	2
ENTMLGY 4604: Urban Entomology	2	PLNTPTH 5030: Nematology	2
ENTMLGY 4606: Introduction to Forensic Entomology	2	PLNTPTH 5040: Science of Fungi: Mycology Lecture AND PLNTPTH 5041: Science of Fungi: Mycology Lab	4
ENTMLGY 4607: Veterinary Entomology	2		
ENTMLGY 5130: Field Insect Taxonomy	3	PLNTPTH 5110/ENTMLGY 5110: Ecology and Mgmt. of Pathogens and Insects Affecting Trees in Forest and Urban Envts.	3
ENTMLGY 5420: Insect Behavior Mechanisms and Function	3		
ENTMLGY 5500: Biological Control of Arthropod Pests	3	PLNTPTH 5120: Diseases of Ornamentals	2
ENTMLGY 5600: Principles and Applications of IPM	3	PLNTPTH 5130: Turf. Diseases & Integrated Turf Health Mgt.	3
ENTMLGY 5800: Pesticide Science	3	PLNTPTH 5140: Diseases of Field Crops	2
ENTMLGY 6310: Insect Physiology and Molecular Biology	3	PLNTPTH 5150: Fruit and Vegetable Diseases	2
ENTMLGY 6410: Insect Ecology and Evolutionary Processes	3	PLNTPTH 5685: Plant Disease Diagnosis	2
HCS 4325: Plant Genetics	3		

TOTAL **36**

**If student took one of these classes as a GE course, these 3 credit hours must be made up in the major electives.*

4-12-2011

Status: PENDING

PROGRAM REQUEST
Major in Plant Health Management

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

Fiscal Unit/Academic Org	Plant Pathology - D1178
Administering College/Academic Group	Food, Agric & Environ Science
Co-adminstering College/Academic Group	Food, Agric & Environ Science
Semester Conversion Designation	Re-envisioned with significant changes to program goals and/or curricular requirements (e.g., degree/major name changes, changes in program goals, changes in core requirements, structural changes to tracks/options/courses)
Current Program/Plan Name	Plant Health Management
Proposed Program/Plan Name	Major in Plant Health Management
Program/Plan Code Abbreviation	PLHLTHM-BS
Current Degree Title	Bachelor of Science in Agriculture

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	16	10.7	19	8.3
	Maximum	32	21.3	25	3.7
Required credit hours offered outside of the unit	Minimum	23	15.3	14	1.3
	Maximum	39	26.0	25	1.0
Required prerequisite credit hours not included above	Minimum	5	3.3	5	1.7
	Maximum	15	10.0	15	5.0

Explain any change in credit hours if the difference is more than 4 semester credit hours between the values listed in columns B and C for any row in the above table

Students could essentially take all courses in the plant pathology department or entomology department, although not recommended.

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

- (See attached file for specially formatted learning outcomes.)
- Appreciate disease and insect threats to the food and fiber supply and environment, and how these events impact global and societal issues and how they shape scientific discovery, policy and mananagement decisions.
- Appreciate insect biology at the molecular, biochemical, organismal, population, community, and ecosystem levels.
- Understand the role of federal, research and regulatory scientific institutions and how policy considerations impact management decisions.
- Understand the history and the nature of science including hypothesis testing as required for scientifically literate populace.
- Achieve a holistic framework for understanding sustainability in ways that cross disciplinary boundaries from entomology and plant pathology to the natural, physical, economic, and social sciences.
- Describe biotic and abiotic causes of plant disease and stress, the nature of plant-microbe interactions, and factors influencing plant health.
- Achieve a conceptual understanding of managed and natural ecosystems through the lens of insect and plant science.
- Utilize the primary informational resources in plant health and pest management.
- Communicate in oral and written formats the tenets of plant health management.
- Demonstrate critical thinking and problem solving skills related to plant health investigations.
- Demonstrate ability to apply critical thinking skills to issue-based cross-disciplinary work and articulate thoughts and analyses.
- Apply classical and molecular techniques for the identification and manipulation of plant-associated microbes and arthropods.
- Design and implement environmentally-sound strategies and methods used in plant health.
- Formulate judgements and demonstrate professional behavior consistent with the highest ethical and moral standards.
- 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.

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

A full assessment plan has been submitting using the survey form

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

- PLNTHLTMGT Major Learning Outcomes 9-29-10.docx: PLNTHLTMGTLearningOutcomes9-29-10

  (Other Supporting Documentation. Owner: Ellis,Serah Dee)

- PLNTHLTMGT Major Program Proposal 12-1-10.pdf: PLNTHLTMGTProgramProposal12-1-10

  (Program Proposal. Owner: Ellis,Sarah Dee)

- PLNTHLTMGT Major Assessment Plan 12-1-10.doc: PLNTHLTMGTAssessmentPlan12-1-10

  (Curricular Map(s). Owner: Ellis,Sarah Dee)

Comments

- Joint major with Entomology. *(by Ellis,Sarah Dee on 09/17/2010 02:39 PM)*

Workflow Information

Status	User(s)	Date/Time	Step
Submitted	Ellis,Sarah Dee	10/01/2010 10:19 AM	Submitted for Approval
Revision Requested	Ellis,Sarah Dee	10/01/2010 10:33 AM	Unit Approval
Submitted	Ellis,Sarah Dee	10/01/2010 10:35 AM	Submitted for Approval
Revision Requested	Ellis,Sarah Dee	10/01/2010 10:45 AM	Unit Approval
Submitted	Ellis,Sarah Dee	10/01/2010 11:15 AM	Submitted for Approval
Approved	Graham,Terrence Lee	10/01/2010 11:41 AM	Unit Approval
Revision Requested	Stokoe,Laurie Anne	10/18/2010 10:51 AM	College Approval
Submitted	Ellis,Sarah Dee	10/28/2010 01:33 PM	Submitted for Approval
Approved	Mitchell,Thomas Kenneth	10/28/2010 01:55 PM	Unit Approval
Revision Requested	Stokoe,Laurie Anne	11/05/2010 03:56 PM	College Approval
Submitted	Ellis,Sarah Dee	11/22/2010 02:41 PM	Submitted for Approval
Approved	Mitchell,Thomas Kenneth	11/22/2010 02:54 PM	Unit Approval
Revision Requested	Stokoe,Laurie Anne	11/29/2010 03:22 PM	College Approval
Submitted	Ellis,Sarah Dee	12/08/2010 03:49 PM	Submitted for Approval
Approved	Mitchell,Thomas Kenneth	12/08/2010 05:17 PM	Unit Approval
Approved	Stokoe,Laurie Anne	01/14/2011 04:08 PM	College Approval
Pending Approval	Soave,Melissa A	01/14/2011 04:08 PM	CAA Approval

THE OHIO STATE UNIVERSITY

Department of Plant Pathology

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Phone (614) 292 -1375
Fax (614) 292 - 4455

September 15, 2010

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

Dear Office of Academic Affairs,

Currently the Department of Plant Pathology offers four programs: Minor in Plant Pathology, B.S. in Agriculture-Major in Plant Health Management, Master of Science in Plant Pathology and Doctorate in Plant Pathology. The Department of Entomology offers a Minor in Entomology, Major in Entomology, Master of Science in Entomology and Doctorate in Entomology. All programs will be offered in the semester system with modifications to each. The Department of Plant Pathology is proposing a new Major in Plant Pathology that will provide a solid foundation in the discipline and prepare students for advanced graduate study. The current Major in Plant Health Management, in the Department of Plant Pathology, will become a joint major between the Department of Plant Pathology and the Department of Entomology aimed at preparing students for plant health management careers in the agricultural and environmental sciences with an applied emphasis. The two departments are also proposing a joint tagged masters titled Master in Plant Health Management.

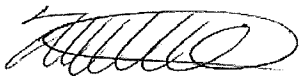
The following document is the proposed Major in Plant Health Management for the B.S. in Agriculture (within the College of Food, Agricultural, and Environmental Sciences) to begin Summer of 2012. The major will require 121 credit hours, including general education, minor, internship and major courses. Students will be closely advised by faculty and staff in both departments. It will be important that advisors work closely with students to develop a four-year plan that fits their academic and career goals.

We have asked for the assistance of undergraduate and graduate students as we developed the semester curriculum. On December 4, 2009, we convened a group of Plant Health Management majors and non-majors to discuss the conversion and their thoughts on how our courses can be best taught in the semester system. We also met with Plant Health Management students on June 9, 2010 where they were presented with our proposed curriculum and asked to review it. Additionally, a student representative was present at joint meetings between the departments. We believe the input we received from these meetings was vital to the success of the Major in Plant Pathology.

Informal input from industry clientele has been very positive with a high degree of support and interest.

Faculty and staff from each department have met several times to discuss the major curriculum and strategy for the semester conversion. Collectively we developed the learning outcomes, curriculum, transition plans, assessment plan, and 4-year plan. The proposal was sent to all faculty in both department for review. A vote was conducted by the faculty in the Department of Plant Pathology on June 17, 2010 resulting in a unanimous affirmative (14/14). A similar vote was conducted with the faculty in the Department of Entomology. The vote there was a unanimous as well (14/14). Subsequently, we forwarded the proposal to the College of Food, Agricultural, and Environmental Sciences for review.

Sincerely,



Thomas Mitchell
Academic Affairs Committee Chair
Department of Plant Pathology
Assistant Professor
Ohio State University
Columbus, OH

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

27 September 2010

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

To whom it may concern in the Office of Academic Affairs:

This is a letter of strong support from the Department of Entomology for the proposed revised major in Plant Health Management, which will be jointly administered by the Department of Plant Pathology and the Department of Entomology. Members of our entomology curriculum committee have met several times with the plant pathologists to work out the details of the program. The entire entomology faculty voted on the program on 24 September 2010; the vote was 14 in favor, none opposed, and one not voting. The consensus is that the revised program is stronger than the existing program that is administered by only the Department of Plant Pathology.

Sincerely,

Celeste Welty

Celeste Welty

Curriculum Committee Chair
& Associate Professor

Major in Plant Health Management

Rationale for proposed program change and description of how the changes will benefit students and enhance program quality.

The Major in Plant Health Management, which is currently the only undergraduate major in the Department of Plant Pathology, has always been interdisciplinary in nature encompassing courses in Plant Pathology, Entomology, and Horticulture and Crop Science. With the addition of the Department of Entomology to CFAES, there was strong agreement to formally make the Major in Plant Health Management a joint major. This will enable us to better teach the integral nature of plant-pathogen-pest interactions that is crucial to understanding Plant Health Management. The development of this joint major has fostered new discussions on joint courses and the integration of course content. In addition, the joint major will allow us to leverage the resources of two departments for course offerings, recruiting, student advising, and professional development opportunities for students.

The only previous/quarter system major in the Department of Plant Pathology was titled Major in Plant Health Management. To compare, the Department of Entomology only had one undergraduate major titled Major in Entomology. These majors attracted two distinct cohorts of students; a group destined for advanced studies in plant pathology or entomology and another interested in becoming practitioners of plant health (e.g., crop advisers, consultants, production managers, inspectors, diagnosticians, regulatory professionals). While the previous majors adequately served both populations, we feel as though it did not provide the focused need of either, nor provided the flexibility to accommodate those needs. To resolve this dilemma, Plant Pathology and Entomology has elected to create a three major system. For students destined for graduate studies, we propose the creation of a Major in Plant Pathology and Major in Entomology, and for the practitioner focused students, we propose this joint Major in Plant Health Management.

While there are similarities between the Major in Plant Health Management, the Major in Plant Pathology, and the Major in Entomology, the proposed joint Major in Plant Health Management requires coursework in plant pathology, entomology, plant biology, horticulture, and weed science. The Major in Plant Pathology, for example, does not have specific course requirements for entomology (General Insect Pest Management) or weed science (Principles of Weed Ecology and Management). The Major in Plant Pathology curriculum is also specifically designed to prepare students for graduate study. Plant Health Management is also a distinct discipline from pure entomology. The Entomology major, which is the longstanding undergraduate major in the Department of Entomology, will continue to serve students interested in basic entomology, veterinary entomology, medical and public health entomology, and other similar areas. The joint major will maintain a large degree of flexibility to allow students to pursue areas of interest, whether it is a specific commodity, pathogen group, pest category, management method or research area.

The writing requirements in the major will be covered by PLNTPTH 5603, the semester version of our current PLNTPTH 603 (Plant Disease Management), which fulfills the requirement for a third writing course. Another course with a writing component (currently PLNTPTH 597 - Societal Issues: Pesticides, Alternatives, and the Environment) will also be available as a Contemporary Issues course. A new two-credit hour capstone course will also be offered where the teaching and learning method will be centered around problem-based learning techniques. Students will be required to write papers and give presentations on problems related to plant health.

Plant Pathology
Semester Course
List

Quarter Course Number	Semester Course Number	Course Title in Semester	Instructor(s)	Quarter Credit Hours	Semester Credit Hours	Number of Weeks	Semester Offered
	2000 - GEC	Molds, Mushrooms and Man	Tom Mitchell		3	14 weeks	Spring
201D	2001	Sick Plants and a Hungry World	Sarah Ellis	3	2	14 weeks	Autumn, Spring
401	3001	General Plant Pathology Lecture	Sarah Ellis	5	2	14 weeks	Autumn
	3002	General Plant Pathology Lab	Sarah Ellis		2	14 weeks	Autumn
395	3195	Plant Health Science Forum	Monica Lewandowski	1	1	14 weeks	May
597	3597	Societal Issues: Pesticides, Alternatives, and the Environment	Monica Lewandowski	5	3	14 weeks	Autumn, Spring
489	4191	Internship Experiences in Plant Health Management	Monica Lewandowski	1-5	1-6	14 weeks	Autumn, Spring, Summer
	4683	Research with Distinction	Faculty		1-6	14 weeks	Autumn, Spring, Summer
H683	4683 (H)	Research with Distinction	Faculty	1-10	1-6	14 weeks	Autumn, Spring, Summer
455	4550	Bioterrorism: An Overview	Michael Boehm	5	2	7 weeks	Spring
	4998	Undergraduate Research	Faculty		1-6	14 weeks	Autumn, Spring, Summer
600.01	5010	Phytobacteriology	Brian McSpadden-Gardener	3	2	7 weeks	Spring
600.02	5020	Introductory Plant Virology	Feng Qu	3	2	7 weeks	Spring
636	5030	Plant Nematology	Chris Taylor	3	2	7 weeks	Spring

660	5040	Science of Fungi: Mycology Lecture	Tom Mitchell	5	3	14 weeks	Autumn
	5041	Science of Fungi:Mycology Lab	Tom Mitchell		1	14 weeks	Autumn
610	5110	Ecology and Management of Pathogens and Insects Affecting Trees in Forest and Urban Environments	Enrico Bonello/Dan Herms	4	3	14 weeks	Spring
501	5120	Diseases of Ornamentals	Dennis Lewandowski	5	2	7 weeks	Spring
612/613	5130	Turf Diseases and Integrated Turf Health Management	Joe Rimelspach	3-4	3	14 weeks	Autumn
614	5140	Diseases of Field Crops	Anne Dorrance and Pierce Paul	3	2	14 weeks	Spring
615	5150	Fruit and Vegetable Diseases	Michael Ellis and Sally Miller	3	2	7 weeks	Spring
603	5603	Plant Disease Management	Michael Ellis and Larry Madden	5	3	14 weeks	Autumn
	5604	Capstone Course: Problem-Based Studies in Plant Health	Faculty from Plant Path and Entomology		2	14 weeks	Spring
685	5685	Plant Disease Diagnosis	Sally Miller	3	2	3 weeks May/Summer	Summer, May
401	6001	Advanced Plant Pathology	Sarah Ellis		3	14 weeks	Autumn
693	6193	Individual Studies	Faculty	1-5	1-6	14 weeks	Autumn, Spring, Summer
702	7002	Plant Disease Epidemiology	Larry Madden	4	3	14 weeks	Spring
703	7003	Agricultural Genomics: Principles and Applications	Guo-Liang Wang and Eric Stockinger	3	3	14 weeks	Spring
830	8300	Current Topics in Plant Pathology	Bonello, Mitchell, McSpadden-Gardener, Wang	1-2	1-2	14 weeks	Autumn, Spring, Summer
602/841/842/843	8400	Molecular Bases of Plant Host-Microbe Interactions	Graham/ Bonello/ McSpadden-Gardener/Redinbaugh/ Taylor/ Mitchell/Wang	1-3	3	14 weeks	Spring

995	8899	Plant Pathology Seminar	Various Instructors	1	1	14 weeks	Autumn, Spring
901	8901	Mentored Teaching in Plant Pathology	Various Instructors	1-5	1-3	14 weeks	Autumn, Spring, Summer
902	8902	Mentored Extension/Outreach Teaching in Plant Pathology	Michael Ellis	1-3	1	14 weeks	Autumn, Spring, Summer
999	8999	Plant Pathology Research	Various Instructors	1-100	1-100	14 weeks	Autumn, Spring, Summer

*No longer offering: 294, 300, 602, 604, 613, 655, 694, 704, 832, 838, 839, 841, 842, 843. Either doing away with or incorporating course into other semester courses.

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	Bio113 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	Landscape 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	no	Research with distinction	Permission of instructor	encouraged	optional	optional
4683H	699	1-3	no	Research with distinction	Permission of instructor	encouraged	optional	optional
COMBINED UNDERGRADUATE & GRADUATE COURSES								
5601	-	3	no	Current Topics in Entomology, Science and Society	Senior status	Required (or 5604)	optional	optional
5604	-	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			
5110 (cross-list Pl. 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 permission of 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	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
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	(694)	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.

Major in Plant Health Management

Semester Curriculum Advising Sheet

Proposed Curriculum for Plant Health Management Major

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

General Education Curriculum: CFAES

Course	Credit Hours
Survey: *(Choose one: FAES 100 or USAS 100, etc.)*	1
Writing Level 1: *(ENG 110)*	3
Writing Level 2: *(Choose from approved CFAES GEC list)*	3
Speech/Communications: *(Choose one: AGRCOMM 390 or COMM 321)*	3
Math: *(Choose one: MATH 1148 or 1150)*	4-5
Data Analysis: *(Choose one: AEDECON 205, AEE 387, HCS 260, ENR 222 or STAT 145)*	3
Biological Science: *(Choose one: BIO 1101, BIO 1113, BIO H1115, ENTMLGY 1101, H&CS 2201 or PLNTBIO 101 (with lab))*	5
Physical Science: *(Choose one: CHEM 121 or CHEM H201 (with lab))*	5
Additional Science: *(Choose one: BIO 1114, PLNTBIO 102, ENTMLGY 2101, H&CS 2202 or PLNTBIO 300)*	3-5
Open Option #1: Physical Science Second Course in Sequence *(Choose one: CHEM 122)*	3-5
Social Science 1: *(Choose one: RURALSOC 105 or SOCIOL 101)*	3
Social Science 2: *(Choose one: AEDECON 200 or ECON 200)*	3
Historical Study: *(Choose from approved CFAES GEC list)*	3
Culture and Ideas or Historical Study: *(Choose from approved CFAES GEC list)*	3
Literature: *(Choose from approved CFAES GEC list)*	3
Art: *(Choose from approved CFAES GEC list)*	3
Contemporary Issues: *(Choose from approved CFAES GEC list)*	3
Minor: *(Student chooses minor. See minor list. Cannot be Plant Pathology or Entomology)*	12-15
Major: *(See below for major requirements and electives)*	36
Internship: *(Done through major department-see advisor) (PLNTPTH 4191 or ENTMLGY 4191)*	2
Electives: *(Choose courses outside of major and minor. See University Course Bulletin)*	10-17
Total Credit Hours for a B.S. in Agriculture, Plant Health Management	**~121**

Proposed Plant Health Management Major Curriculum

Course	Credit Hours
Required Courses (25-28 credit hours) *(24-25 credit hours if student has taken ENTMLGY 1101):*	
ENR 300.01 (lecture) and ENR 300.02 (lab): Soil Science	4
*H&CS 2201: Ecology of Managed Plant Systems OR H&CS 2202: Form and Function in Cultivated Plants	3
H&CS 5422: Principles of Weed Ecology and Management	4
PLNTBIO 436: Intro Plant Physiology	3
PLNTPTH 5603: Plant Disease Management	3
PLNTPTH/ENTMLGY 5604: Capstone Course: Problem-Based Studies in Plant Health	2
Also select one of the following core plant pathology courses (required):	
PLNTPTH 3001: General Plant Pathology- lecture and PLNTPTH 3002: General Plant Pathology- lab	4
PLNTPTH 6001: Advanced Plant Pathology	3
Also select one of the following core entomology courses:	
(Required only if student did not take ENTMLGY 1101 as BIO SCI requirement):	
ENTMLGY 3000: General Entomology	3
ENTMLGY 4600: Introductory Insect Science	1
Also select one of the following entomology support courses (required):	
ENTMLGY 4601: General Insect Pest Management	2
ENTMLGY 4602: Landscape Entomology	2
ENTMLGY 4603: Agricultural Entomology	2
Electives (8-11 credit hours) *(11-12 credit hours if student has taken ENTMLGY 1101 and will not require ENTMLGY 3000 or 4600 from above required list):*	
BIOCHEM 211: Elements of Biochemistry	2
BIOCHEM 511: Introduction to Biological Chemistry	4
CHEM 123: General Chemistry	3
CHEM 231 or 251: Organic Chemistry	3
CHEM 245: Organic Chemistry	3
EEOB 400: Evolution	3
EEOB 503.01: Introduction to Ecology	3
ENR 580.01: Soil Fertility and Fertilizers	3
ENR 540: Urban and Sports Turf Soils	2
ENTMLGY 3330 H4440: Social Insects	3
ENTMLGY 4604: Urban Entomology: Structural and Nuisance Pests	2
ENTMLGY 4606: Forensic Entomology	2
ENTMLGY 4607: Veterinary Entomology	2
ENTMLGY 5120: Aquatic Entomology	3
ENTMLGY 5130: Field Insect Taxonomy	3
ENTMLGY 5420: Insect Behavior	3
ENTMLGY 5500: Biological Control of Arthropod Pests	3
ENTMLGY 5600: Principles and Applications of Integrated Pest Management	3
ENTMLGY 5800: Pesticide Science	3
ENTMLGY 6310: Insect Physiology and Molecular Biology	3
ENTMLGY 6410: Insect Ecology and Evolutionary Processes	3
H&CS 4325: Plant Genetics	3
H&CS 4411: Grain, Oilseed, and Fiber Crops	3
H&CS 4412: Forages, Grasslands, and Prairies	3
H&CS 5450: Vegetable Production	3
H&CS 5460: Fruit Crop Physiology and Production	3
H&CS 5621: Crop Physiology	3
MICROBIOL 509: Basic and Practical Microbiology	4
MICROBIOL 520: General Microbiology 1	3
MICROBIOL 581: Microbial Genetics	4
MOLGEN 500: General Genetics	4
PLNTPTH 5010: Phytobacteriology	2
PLNTPTH 5020: Virology	2
PLNTPTH 5030: Nematology	2
PLNTPTH 5040: Science of Fungi: Mycology Lecture AND PLTNPTH 5041: Science of Fungi: Mycology Lab	4
PLNTPTH 5110/ENTMLGY 5110: Ecology and Management of Pathogens and Insects Affecting Trees in Forest and Urban Environments	3
PLNTPTH 5120: Diseases of Ornamentals	2
PLNTPTH 5130: Turfgrass Diseases and Integrated Turf Health Management	3
PLNTPTH 5140: Diseases of Field Crops	2
PLNTPTH 5150: Fruit and Vegetable Diseases	2
PLNTPTH 5685: Plant Disease Diagnosis	2
TOTAL	**Needs ~36 credit hours to fulfill major requirements**

**If student took one of these classes as a GE course, these 3 credit hours must be made up in the electives.*

Major in Plant Health Management

Semester 4-Year Plan

Year 1	Fall Semester	Credit Hours	Spring Semester	Credit Hours
	Survey FAES 100	1	ENGLIGH 110	3
	RURALSOC 105 or SOC 101	3	CHEM 121 (PHY SCI)	5
	ENTMLGY 1101 (BIO SCI)	4	ADDITIONAL SCIENCE	5
	MATH 1148 or 1150	4	ART	3
	Free Elective	2		
	Total	14	Total	16

31 credit hours

Year 2	Fall Semester	Credit Hours	Spring Semester	Credit Hours
	Data Analysis	3	H&CS 2201 or H&CS 2202	3
	AEDECON 200 or ECON 200	3	HISTORY	3
	CHEM 122 (OPEN OP)	5	ENTMLGY 4601 or 4602 or 4603	2
	Second Writing	3	Major Elective	3
	Free Elective	2	Free Elective	3
	Total	16	Total	14

30 credit hours

Year 3	Fall Semester	Credit Hours	Spring Semester	Credit Hours
	LITERATURE	3	AGCOMM 390 or COMM 321	3
	ENR 300.01 & 300.02	4	Culture and Ideas	3
	Minor	3	Minor	3
	PLNTPTH 3001 and 3002	4	H&CS 5422	4
	Free Elective	2	Major Elective	3
	Total	16	Total	16

31 credit hours

Year 4	Fall Semester	Credit Hours	Spring Semester	Credit Hours
	PLNTBIO 436	3	PLNTPTH 5603	3
	Contemp. Issues	3	PLNTPTH5604/ENTMLGY Capstone	2
	Minor	3	Major Elective	3
	Major Elective	3	Minor	3
	Free Elective	2	Free Elective	2
	Internship	2		
	Total	16	Total	13

29 credit hours

TOTAL FOR THE DEGREE: 121 credit hours

PLANT HEALTH MANAGEMENT
New Students Entering OSU Summer 2007 and Thereafter

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 130 or 148	4
Natural Sciences	**24-25**
Biology 101 or 113 or H115 or Plnt Bio 101	
Chemistry 101 or 121 or H201	
Physics 103 or 106 or 111 or 131 or 161	
Second Course in a Sequence (Select one): Biology 102 or 114 or H116; Chemistry 102 or 122 or H202; Plnt Bio 102; Physics 104 or 107 or 112 or 132 or 162 The second course in a sequence and Fifth Nat. Sci. requirement may also be filled by taking EarthSci 121 and ENR 300.01 and 300.02	
Fifth Natural Science/Math (Select one): Anim Sci 310; Biology 102, 114, H116; Chemistry 102, 122, 123, H202, H203; EEOB 232, 235; ENR 201, 300.01 and 300.02; FD SC&TE 201; H&CS 200, 300; Humn Ntr 210; Math 131 (WI03 or thereafter) or 132 (prior to SP03) or 151; Microbiology 509; Physics 104, 107, 112, 113, 132, 133, 162; or Plnt Bio 102, 300	

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 and Performing Arts	5	
Contemporary Issues (See approved CFAES GEC list)		**5**
Major (See below)		**55-65**
Internship (Plant Path 489)		**3-5**
Minor		**20-25**
Students majoring in Plant Health Management **cannot** select a minor in Plant Pathology or Entomology.		
Free Electives		**8-31**
TOTAL		**183**

Major — 55-65

(For students using Chem 102 or 122 and/or ENR 300.01 and 300.02 to also serve as a GEC Natural Science course, the minimum number of hours reduces by five to ten hours)

Required Courses:

ENR 300.01 and 300.02		Soil Science	5
CHEM	102 OR 122	Chemistry	5
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
H&CS	422	Principles of Weed Science	4
PLNT PATH	401	General Plant Pathology	5
PLNT PATH	603	Plant Disease Management	5

Select one of the following options:

ENTOMOL	460	Economic Entomology & Insect Pest Management	5
ENTOMOL	460.01 & 460.02 or 460.03	Economic Ento Lecture and Lab	5
ENTOMOL	462	Economic Ento for Turf, Ornamentals and Greenhouse	4

Select two courses from the following:

PLNT PATH 300, 455, 501, 600.01, 600.02, 602, 610, 612, 613, 615, 636, 660 or 685 — 6-10

Electives: (select a minimum of 16 hours from the list below)

H&CS	200	Crop Science	5
H&CS 300 or PLNT BIO 300		General Plant Biology	5
ENR	580.01	Soil Fertility and Fertilizers	3
BIO	114	Biological Sciences	5
CHEM	123	General Chemistry	5
CHEM	231 or 251	Organic Chemistry	3
CHEM	245	Organic Chemistry	3
ENTOMOL	531	Pesticides, Environ and Society	3
MOL GEN	500	General Genetics	5
MICROBIOL	509	Basic and Practical Microbiol	5
MICROBIOL	520	General Microbiology I	5
PLNT BIO	436	Intro Plant Physiology	5

New First Quarter Freshmen and Transfer Students With 44 or Fewer Credit Hours Entering OSU Summer 2007 and Thereafter

RECOMMENDED COURSE PLAN FOR PLANT HEALTH MANAGEMENT MAJORS

This model plan of study is presented as a suggested path to graduation in 4 years. Students have unique situations that may cause them to deviate from this plan. This is especially true for students who transfer into the major after their sophomore year. Nevertheless, it is important for you to consider the flow of courses, in particular major courses.

Year	Autumn		Winter		Spring		Benchmarks
1st	FAES 100	1	English 110.01	5	AED Econ 200 or Econ 200	5	***Math 130 or 148 and English 110C should be completed by end of year.***
	Rural Soc 105 or Soc 101	5	History	5	Literature	5	
	Math 130 or 148	4	Chem 101 or 121 or H201	5	Chem 102 or 122 or H201	5	
	Visual & Performing Art	5					
	Minimum	**15**	**Minimum**	**15**	**Minimum**	**15**	**Minimum 45 hours**
Year	**Autumn**		**Winter**		**Spring**		
2nd	Data Analysis	5	Addit. Social Science	5	Physics 103, 106, 111, 131 or 161	5	***Minor should be declared by end of this year.***
	Second Writing	5	Soil Sci 300.01 & 300.02	5	Major Electives	5	***At least three sciences should be completed by end of year.***
	Biology 101 or 113 or H115	5	Additional Nat Sci Course	5	Minor	5	***Consider a study abroad program.***
							Begin to consider an internship location.
	Minimum	**15**	**Minimum**	**15**	**Minimum**	**15**	**Minimum 45 hours**
Year	**Autumn**		**Winter**		**Spring**		
3rd	Plant Path 401	5	Electives	3	Agr Comm 390	5	***Internship should be completed by the end of summer.***
	H&CS 422	4	Plant Path Option Course	5	Plant Path 603	5	***Half the minor should be complete by the end of year.***
	Entomol 462	4	Minor	3	Minor	5	***Half the hours in the major should be completed by the end of year.***
	Major Electives or Minor	4	Major Elective	5			***Apply to graduate at least three qtrs prior to graduation***
	Minimum	**17**	**Minimum**	**16**	**Minimum**	**15**	**Minimum 48 hours**
Year	**Autumn**		**Winter**		**Spring**		
4th	Contemporary Issues	5	Minor	5	Major Electives	5	
	Plant Path Option Course	5	Free Electives	5	Minor	5	
	Minor	3	Free Electives	4	Free Electives	5	
	Plant Path 489	3					
	Minimum	**16**	**Minimum**	**14**	**Minimum**	**15**	**Minimum 45 hours** **TOTAL 183 Hours**

Please refer to the General Education Curriculum sheet for the major for additional important curriculum information. Students must complete two international issues courses. One must be a non-western or global course designated by an asterisk (*). The second can be another non-western or global course (*) or a western (non-US) course designated with a diamond (◊). Students majoring in Plant Health Management cannot select a minor in Plant Pathology.

Major in Plant Health Management

Transition Policy

A student entering the Major in Plant Health Management degree program in **Autumn of 2010** will spend two years in the quarter system and the remainder in the semester system. A suggested list of courses a typical student will take each quarter/semester is below.

Freshmen Enrolling in Autumn 2010

There will be key changes from the quarter system to the new semester system with one major in the Department of Plant Pathology (B.S. in Agriculture, Major in Plant Pathology), one major in the Department of Entomology (B.S. in Agriculture, Major in Entomology) and a joint major between Plant Pathology and Entomology (B.S. in Agriculture, Major in Plant Health Management). In the current quarter system each department offers one major (Plant Pathology: Major in Plant Health Management and Entomology: Major in Entomology). A student starting in the Autumn of 2010 will be able to select the major in Plant Pathology, Entomology or Plant Health Management (although a student can switch between these majors during their college career and remain on track to graduate in four years). If the student chooses a major in Plant Health Management they will be advised to follow the map below.

This policy is based on the semester system curriculum requirements and will help ensure a student does not take courses that will not apply towards graduation in the semester system. The student will be advised to complete a majority of the required GEC and some key core courses in the quarter system to allow for flexibility with minor, major, and free electives in the semester system since it is yet undecided when certain courses will be offered in semesters. Under the quarter system (Autumn 2010-Spring 2012) the student will complete their required general education courses (Survey, Chemistry sequence, Biology sequence, Math, Data Analysis, Writing Levels 1 and 2, Social Sciences 1 and 2, History, Cultures and Ideas, Literature, Art) (~23 courses total). Students will also be advised to complete the following required courses for the major: Soil Science, Introductory Plant Pathology, General Entomology, Principles of Weed Science, and the Science of Plants. Remaining course requirements will be completed in the semester system. When converting to semesters in the Summer of 2012, students will be able to transition smoothly and have flexibility in their schedule. The students will need to fulfill course requirements for the Minor, Major Electives, Plant Physiology, Communications/Speech, Contemporary Issues, Internship, Plant Disease Management, and a majority of the Free Electives (~17 courses total) in the semester system.

By converting the quarter credit hours to semester credit hours, students should have sufficient credit hours and be able to complete degree requirements in four years.

Suggested course map for students entering Autumn 2010 with **Entomology 1101** as the Biological Science
Q: Number of credit hours in the quarter system
S: Number of credit hours in the semester system

Year	Quarter/Semester	Courses
1	Autumn2010	FAES 100 Survey (1Q) (1S) ENTMLGY 101 (5Q) (5S) AEDECON 200/ECON 200 (5Q) (3S) RURALSOC 105/SOC 101 (5Q) (3S)
1	Winter 2011	MATH 148 (4Q) (4S) CHEM 121 (5Q) (5S) ENTMLGY 102 (5Q) (5S) ENG 110 (5Q) (3S)
1	Spring 2011	Data Analysis (5Q) (3S) ART (5Q) (3S) CHEM 122 (5Q) (3S)
2	Summer 2011	
2	Autumn 2011	PLNTPTH 401 (5Q) (4S) LITERATURE (5Q) (3S) ENR 300.01/300.02 (5Q) (4S)
2	Winter 2012	Culture and Ideas (5Q) (3S) Writing level 2 (5Q) (3S) HISTORY (5Q) (3S) ENTMLGY 460 (5Q) (3S) (4600 and 4601 in semesters)
2	Spring 2012	H&CS 422 (5Q) (2S) Major Elective (3Q) (2S) H&CS 200 (5Q) (3S) Free Elective (2Q) (3S)
	Semester System Begins	
3	May/Summer 2012	
3	Autumn 2012	Major Elective (5S) Minor (3S) Free Elective (3S)
3	Spring 2013	AGCOMM 390/COMM 321 (3S) Minor (3S) Major Elective (3S) Free Elective (3S)
4	May/Summer 2013	Internship (2S)
4	Autumn 2013	Contemporary Issues (3S) Major Elective (3S) Minor (3S) Free Elective (3S)
4	Spring 2013	PLNTBIO 436 (3S) PLNTPTH 5603 (3S) PLNTPTH/ENTMLGY5604Capstone(2S) Minor (3S) Free Elective (3S)

Suggested course map for students entering Autumn 2010 with **Biology 101 or 113** the Biological Science

Year	Quarter/Semester	Courses
1	Autumn2010	FAES 100 Survey (1Q) (1S) BIO 101 or 113 (5Q) (5S) AEDECON 200/ECON 200 (5Q) (3S) RURALSOC 105/SOC 101 (5Q) (3S)
1	Winter 2011	MATH 148 (4Q) (4S) CHEM 121 (5Q) (5S) BIO 102 or 114 (5Q) (5S) ENG 110 (5Q) (3S)
1	Spring 2011	Data Analysis (5Q) (3S) ART (5Q) (3S) CHEM 122 (5Q) (3S)
2	Summer 2011	
2	Autumn 2011	PLNTPTH 401 (5Q) (4S) LITERATURE (5Q) (3S) ENR 300.01/300.02 (5Q) (4S)
2	Winter 2012	Culture and Ideas (5Q) (3S) Writing level 2 (5Q) (3S) HISTORY (5Q) (3S) ENTMLGY 460 (5Q) (3S)(4600 and 4601)
2	Spring 2012	H&CS 422 (5Q) (2S) Major Elective (3Q) (2S) H&CS 200 (5Q) (3S) Free Elective (2Q) (3S)
	Semester System Begins	
3	May/Summer 2012	
3	Autumn 2012	Major Elective (5S) Minor (3S) Free Elective (3S)
3	Spring 2013	AGCOMM 390/COMM 321 (3S) Minor (3S) Major Elective (3S) Free Elective (3S)
4	May/Summer 2013	Internship (2S)
4	Autumn 2013	Contemporary Issues (3S) Major Elective (3S) Minor (3S) Free Elective (3S)
4	Spring 2013	PLNTBIO 436 (3S) PLNTPTH 5603 (3S) PLNTPTH/ENTMLGY5604C$_{apstone}$(2S) Minor (3S) Free Elective (3S)

Freshmen Enrolling in Autumn 2011

A student entering the Major in Plant Health Management degree program in **Autumn of 2011** will spend one year in the quarter system and the remainder in the semester system. Students entering in the Autumn of 2011 will be able to select a major in Plant Pathology, Entomology or Plant Health Management. If they choose Plant Health Management they will be advised to follow the course map below.

The map is similar to the curriculum map for students enrolling in Autumn 2012, with only a few differences in general education courses. The student will be advised to take all general education courses their first year (in quarters) (~10 courses). The general education courses will help prepare them for courses they will need in the major. In Autumn of 2012 they will take General Plant Pathology (PLNTPTH 3001/3002) and complete their degree program in the semester system.

By converting the quarter credit hours to semester credit hours, students should have sufficient credit hours and be able to complete degree requirements in four years.

Suggested course map for students entering Autumn 2011 with **Entomology 1101** as the Biological Science
Q: Number of credit hours in the quarter system
S: Number of credit hours in the semester system

Year	Quarter/Semester	Courses
1	Autumn 2011	FAES 100 Survey (1Q) (1S) ENTMLGY 101 (5Q) (5S) AEDECON 200/ECON 200 (5Q) (3S) RURALSOC 105/SOC 101 (5Q) (3S)
1	Winter 2012	MATH 148 (4Q) (4S) CHEM 121 (5Q) (5S) ENG 110 (5Q) (3S)
1	Spring 2012	ENTMLGY 102 (5Q) (5S) Data Analysis (5Q) (3S) CHEM 122 (5Q) (3S)
	Semester System Begins	
2	May/Summer 2012	
2	Autumn 2012	PLNTPTH 3001/3002 (4S) Writing level 2 (3S) ART (3S) Free Elective (2S)
2	Spring 2013	HISTORY (3S) ENTMLGY 4601/4602/4603 (2S) H&CS 2201 or 2202 (3S) Major Elective (2S) Free Elective (3S)
3	May/Summer 2013	
3	Autumn 2013	ENR 300.01/300.02 (4S) LITERATURE (3S) Major Elective (3S) Minor (3S) Free Elective (3S)
3	Spring 2014	AGCOMM 390/COMM 321 (3S) Culture and Ideas (3S) PLNTPTH 5603 (3S) Minor (3S) Free Elective (3S)
4	May/Summer 2014	Internship (2S)
4	Autumn 2014	H&CS 4422 (3S) Contemporary Issues (3S) Minor (3S) Major Elective (3S) Free Elective (3S)
4	Spring 2015	PLNTBIO 436 (3S) PLNTPTH/ENTMLGY 5604 Capstone (2S) Major Elective (3S) Minor (3S) Free Elective (3S)

Suggested course map for students entering Autumn 2011 with **Biology 101 or 113** as the Biological Science

Year	Quarter/Semester	Courses
1	Autumn 2011	FAES 100 Survey (1Q) (1S) BIO 101 or 113 (5Q) (5S) AEDECON 200/ECON 200 (5Q) (3S) RURALSOC 105/SOC 101 (5Q) (3S)
1	Winter 2012	MATH 148 (4Q) (4S) CHEM 121 (5Q) (5S) ENG 110 (5Q) (3S)
1	Spring 2012	BIO 102 or 114 (5Q) (5S) Data Analysis (5Q) (3S) CHEM 122 (5Q) (3S)
	Semester System Begins	
2	May/Summer 2012	
2	Autumn 2012	PLNTPTH 3001/3002 (4S) Writing level 2 (3S) ART (3S) Free Elective (2S) ENTMLGY 4600 (1S)
2	Spring 2013	HISTORY (3S) ENTMLGY 4601/4602/4603 (2S) H&CS 2201 or 2202 (3S) Major Elective (2S) Free Elective (3S)
3	May/Summer 2013	
3	Autumn 2013	ENR 300.01/300.02 (4S) LITERATURE (3S) Major Elective (2S) Minor (3S) Free Elective (3S)
3	Spring 2014	AGCOMM 390/COMM 321 (3S) Culture and Ideas (3S) PLNTPTH 5603 (3S) Minor (3S) Free Elective (3S)
4	May/Summer 2014	Internship (2S)
4	Autumn 2014	H&CS 4422 (3S) Contemporary Issues (3S) Minor (3S) Major Elective (3S) Free Elective (3S)
4	Spring 2015	PLNTBIO 436 (3S) PLNTPTH/ENTMLGY 5604 Capstone (2S) Major Elective (3S) Minor (3S) Free Elective (3S)

Major in Plant Health Management

Program Learning Goals

AREAS	Upon successful completion of the Plant Health Management major, students should:
Foundational Knowledge	***Global Perspectives***
	1. Appreciate disease and insect threats to the food and fiber supply and environment, and how these events impact global and societal issues and how they shape scientific discovery, policy and management decisions;
	2. Appreciate insect biology at the molecular, biochemical, organismal, population, community, and ecosystem levels;
	3. Understand the role of federal, research, and regulatory scientific institutions and how policy considerations impact management decisions;
	4. Understand the history and the nature of science including hypothesis testing as required for scientifically literate populace;
	5. Achieve a holistic framework for understanding sustainability in ways that cross disciplinary boundaries from entomology and plant pathology to the natural, physical, economic and social sciences;
	Subject Area
	6. Describe biotic and abiotic causes of plant disease and stress, the nature of plant-microbe interactions, and factors influencing plant health;
	7. Achieve a conceptual understanding of managed and natural ecosystems through the lens of insect and plant science;
Skills	***Problem Solving and Communication***
	8. Utilize the primary informational resources in plant health and pest management;

	9. Communicate in oral and written formats the tenets of plant health management;
	10. Demonstrate critical thinking and problem solving skills related to plant health investigations;
	11. Demonstrate the ability to apply critical thinking skills to issues-based cross-disciplinary work and articulate thoughts and analyses;
	Subject Area
	12. Apply classical and molecular techniques for the identification and manipulation of plant-associated microbes and arthropods;
	13. Design and implement environmentally-sound strategies and methods used in plant health management;
Professionalism	14. Formulate judgments and demonstrate professional behavior consistent with the highest ethical and moral standards; and
	15. 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.

Major in Plant Health Management
Assessment Plan

Learning Outcome-Course Matrix

	Major Learning Outcomes	Achievement of learning goals at different levels.		
Foundational	***Global Perspectives***	Beginning	Intermediate	Advanced
Knowledge	LO#1: Appreciate disease and insect threats to the food and fiber supply and environment, and how these events impact global and societal issues and how they shape scientific discovery, policy and management decisions;	PLNTPTH: 3195 (Plant Hlth. Forum), 4683 (Research Distinction), 4683H (Honors Project), 4998 (UG Research), 5120 (Dis. of Ornamentals), 5140 (Dis. of Field Crops), 5685 (Dis. Diagnosis), 6193 (Individual Stud.)	PLNTPTH: 2000 (Molds, Mushrooms, Man), 2001 (Social Issues), 3597 (Cont. Issues), 4550 (Bioterrorism), 5010 (Bacteriology), 5020 (Virology), 5030 (Nematology)	PLNTPTH: 3001 (Gen. Plant Path), 5040 (Mycology Lecture), 5041 (Mycology Lab), 5110 (Forest Health Protect.)
		ENTOMOL: 1101 (Insect Biology), 2101 (Insects & Human Society), 4600 (Introductory Insect Science)	ENTOMOL: 4601 (General Insect Pest Mgmt), 4602 (Landscape Entomology), 4603 (Agricultural Entomology)	ENTOMOL: 4550 (Capstone), 5110 (Forest Health Protection)
	LO#2: Appreciate insect biology at the molecular, biochemical, organismal, population, community, and ecosystem levels;	PLNTPTH: 5603 (Dis. Mgt.)	PLNTPTH: N/A	PLNTPTH: N/A
		ENTOMOL: 1101 (Insect Biology), 3000 (General Entomology), 4600 (Introductory Insect Science)	ENTOMOL: 4601 (General Insect Pest Mgmt), 4602 (Landscape Entomology), 4603 (Agricultural Entomology)	ENTOMOL: 3330/H4440 (Social Insects), 5110 (Forest Health Protection), 5130 (Field Insect Taxonomy), 5420 (Insect Behavior), 5500 (Biological Control),
	LO#3: Understand the role of federal, research, and regulatory scientific institutions and how policy	PLNTPTH: 2001 (Social Issues), 3195 (Plant Hlth. Forum), 4550 (Bioterrorism), 5140 (Dis.	PLNTPTH: 3001 (Gen. Plant Path), 3002 (Gen. Plant Path Lab), 3597 (Cont. Issues)	PLNTPTH: 5110 (Forest Health Protect.)

	considerations impact management decisions;	of Field Crops), 5603 (Dis. Mgt.), 4597 (Cont. Issues)		
		ENTOMOL: 4601 (General Insect Pest Mgmt), 4602 (Landscape Entomology), 4603 (Agricultural Entomology), 5110 (Forest Health Protection)	ENTOMOL: 5800 (Pesticide Sci.)	ENTOMOL: 4550 (Capstone)
	LO#4: Understand the history and the nature of science including hypothesis testing as required for scientifically literate populace;	PLNTPTH: 2001(Social Issues), 3001 (Gen. Plant Path), 6001 (Adv. Plant Path)	PLNTPTH: N/A	PLNTPTH:N/A
		ENTOMOL: 1101 (Insect Biology)	ENTOMOL: N/A	ENTOMOL: 4550 (Capstone)
	LO#5: Achieve a holistic framework for understanding sustainability in ways that cross disciplinary boundaries from entomology and plant pathology to the natural, physical, economic and social sciences;	PLNTPTH: 3001 (Gen. Plant Path)	PLNTPTH: 6001 (Adv. Plant Path)	PLNTPTH: 5603 (Dis. Mgt.), 5604 (Capstone)
		ENTOMOL: 3330/H4440 (Social Insects)	ENTOMOL: 4601 (General Insect Pest Mgmt), 4602 (Landscape Entomology), 4603 (Agricultural Entomology), 5500 (Biological Control), 5800 (Pesticide Science)	ENTOMOL: 4550 (Capstone), 5110 (Forest Health Protection)
		H&CS 2200 (Sustainable Prod.)		
	LO#6: Describe biotic and abiotic causes of plant disease and stress, the nature of plant-microbe interactions, and factors influencing plant health;	PLNTPTH: 2001 (Social Issues), 4550 (Bioterrorism), 5020 (Virology), 5140 (Dis. Of Field Crops)	PLNTPTH: 5030 (Nematology), 5120 (Dis. of Ornamentals), 5150 (Fruit and Veg. Dis.), 5603 (Dis. Mgt.), 5685 (Dis. Diagnosis)	PLNTPTH: 3001 (Gen. Plant Path), 3002 (Gen. Plant Path Lab), 5010 (Bacteriology), 5040 (Mycology Lecture), 5041 (Mycology Lab), 5110 (Forest Health Protect.), 5130 (Turf Dis.)

		ENTOMOL: 1101 (Insect Biology), 3000 (General Entomology)	ENTOMOL: 4601 (General Insect Pest Mgmt), 4602 (Landscape Entomology), 4603 (Agricultural Entomology)	ENTOMOL: 4550 (Capstone), 5110 (Forest Health Protection), 5420 (Insect Behavior)
		HCS 2200 (Sustainable Prod.), 4422 (Weed Sci.)		
	LO#7: Achieve a conceptual understanding of managed and natural ecosystems through the lens of insect and plant science;	PLNTPTH: N/A	PLNTPTH: 3001 (Gen. Plant Path), 3002 (Gen. Plant Path Lab), 6001 (Adv. Plant Path)	PLNTPTH: 5603 (Dis. Mgt.), 5604 (Capstone)
		ENTOMOL: 1101 (Insect Biology), 3000 (General Entomology)	ENTOMOL: 4601 (General Insect Pest Mgmt), 4602 (Landscape Entomology), 4603 (Agricultural Entomology), 5420 (Insect Behavior)	ENTOMOL: 4550 (Capstone), 5110 (Forest Health Protection), 5500 (Biological Control), 5800 (Pesticide Science)
		EEOB 503 (Ecology) PLNTBIO 436 (Plant Phys.) H&CS 4422 (Weed Sci.)		
Skills	***Problem Solving and Communication***			
	LO#8: Utilize the primary informational resources in plant health and pest management;	PLNTPTH: 2001 (Social Issues), 3001 (Gen. Plant Path), 3002 (Gen. Plant Path Lab), 3195 (Plant Hlth. Forum), 3597 (Cont. Issues), 5140 (Dis. of Field Crops), 6193 (Individual Stud.)	PLNTPTH: 4683 (Research Distinction), 4683H (Honors Project), 4998 (UG Research), 5010 (Bacteriology), 5030 (Nematology), 5110 (Forest Health Protect.), 5120 (Dis. of Ornamentals), 5150 (Fruit and Veg Dis.),5603 (Dis. Mgt.), 5604 (Capstone), 5685 (Dis.	PLNTPTH: 4191 (Internship), 5130 (Turf Dis.)

			Diagnosis), 6001 (Adv. Plant Path)	
		ENTOMOL: 4601 (General Insect Pest Mgmt), 3402 (Landscape Entomology), 4603 (Agricultural Entomology), 5110 (Forest Health Protection)	ENTOMOL: 5420 (Insect Behavior), 5500 (Biological Control), 5800 (Pesticide Science)	ENTOMOL: 4550 (Capstone)
	LO#9: Communicate in oral and written formats the tenets of plant health management;	PLNTPTH: 2000 (Molds, Mushrooms, Man), 2001 (Social Issues), 3001 (Gen. Plant Path), 3002 (Gen. Plant Path Lab), 3597 (Cont. Issues), 5130 (Turf Dis.), 5140 (Dis. of Field Crops), 6193 (Individual Stud.)	PLNTPTH: 4191 (Internship), 4683 (Research Distinction), 4683H (Honors Project), 4998 (UG Research), 5010 (Bacteriology), 5030 (Nematology), 5040 (Mycology Lecture), 5110 (Forest Health Protect.), 5120 (Dis. of Ornamentals), 5603 (Dis. Mgt.), 5604 (Capstone), 5685 (Dis. Diagnosis), 6001 (Adv. Plant Path)	PLNTPTH: N/A
		ENTOMOL: 4601 (General Insect Pest Mgmt), 4602 (Landscape Entomology), 4603 (Agricultural Entomology), 5110 (Forest Health Protection)	ENTOMOL: 5500 (Bio. Control)	ENTOMOL: 4550 (Capstone), 4990 (Undergrad Research)
	LO#10: Demonstrate critical thinking and problem solving skills related to plant health investigations;	PLNTPTH: 3001 (Gen. Plant Path), 3002 (Gen. Plant Path Lab), 3597 (Cont. Issues), 4550 (Bioterrorism), 5140 (Dis.	PLNTPTH: 4683 (Research Distinction), 4683H (Honors Project), 4998 (UG Research), 5030 (Nematology), 5040	PLNTPTH: 4191 (Internship), 5010 (Bacteriology), 5110 (Forest Health Protect.), 5604 (Capstone)

		of Field Crops), 6193 (Individual Stud.)	(Mycology Lecture), 5041 (Mycology Lab), 5120 (Dis. of Ornamentals), 5130 (Turf Dis.), 5150 (Fruit and Veg Dis.), 5685 (Dis. Diagnosis), 6001 (Adv. Plant Path),	
		ENTOMOL: 4601 (General Insect Pest Mgmt), 4602 (Landscape Entomology), 4603 (Agricultural Entomology)	ENTOMOL: 5420 (Insect Behavior), 5500 (Biological Control), 5800 (Pesticide Science)	ENTOMOL: 4990 (Undergrad Research), 4550 (Capstone), 5110 (Forest Health Protection)
	LO#11: Demonstrate the ability to apply a set of critical thinking skills to issue-based cross-disciplinary work and articulate thoughts and analyses;	PLNTPTH: N/A	PLNTPTH: 3001 (Gen. Plant Path), 3002 (Gen. Plant Path Lab), 6001 (Adv. Plant Path)	PLNTPTH: 4998 (UG Research), 5603 (Dis. Mgt.), 5604 (Capstone)
		ENTOMOL: N/A	ENTOMOL: 5110 (Forest Health Protect.), 5500 (Biological Control), 5800 (Pesticide Science)	ENTOMOL: 4550 (Capstone), 4990 (Undergrad Research)
		ENR 300.01 & 300.02 (Soil Sci.)		
	Subject Area			
	LO#12: Apply classical and molecular techniques for the identification and manipulation of plant-associated microbes and arthropods;	PLNTPTH: 5020 (Virology), 5110 (Forest Health Protect.)	PLNTPTH: 5010 (Bacteriology), 5030 (Nematology), 5130 (Turf Dis.)	PLNTPTH: 5040 (Mycology Lecture), 5041 (Mycology Lab), 5685 (Dis. Diagnosis)
		ENTOMOL: 3000 (General Entomology), 4601 (General Insect Pest Mgmt), 4602 (Landscape Entomology), 4603 (Agricultural Entomology)	ENTOMOL: 5110 (Forest Health Protection), 5420 (Insect Behavior), 5500 (Biological Control), 5800 (Pesticide Science)	ENTOMOL: 5130 (Field Insect Taxonomy)

		MICROBIO 509 (Basic Micro), 520 (Gen. Micro), 581 (Micro Genetics) MOLGEN 500 (Micro Genetics)		
	LO#13: Design and implement environmentally-sound strategies and methods used in plant health management;	PLNTPTH: 3002 (Gen. Plant Path Lab), 5010 (Bacteriology), 5110 (Forest Health Protect.), 5140 (Fruit and Veg Dis.)	PLNTPTH: 5030 (Nematology), 5120 (Dis. of Ornamentals), 5130 (Turf Dis.), 5150 (Fruit and Veg Dis.) , 6001 (Adv. Plant Path)	PLNTPTH: 5604 (Capstone)
		ENTOMOL: 4601 (General Insect Pest Mgmt), 4602 (Landscape Entomology), 4603 (Agricultural Entomology), 5110 (Forest Health Protection), 5420 (Insect Behavior)	ENTOMOL: 5500 (Biological Control), 5800 (Pesticide Science)	ENTOMOL: 4191 (Internship), 4550 (Capstone)
Professionalism	LO#14: Formulate judgments and demonstrate professional behavior consistent with the highest ethical and moral standards; and	PLNTPTH: 5010 (Bacteriology), 5020 (Virology), 5140 (Dis. of Field Crops)	PLNTPTH: 4550 (Bioterrorism), 5030 (Nematology), 5120 (Dis. of Ornamentals), 5685 (Dis. Diagnosis), 6001 (Adv. Plant Path)	PLNTPTH: 4191 (Internship), 5110 (Forest Health Protect.), 5604 (Capstone)
		ENTOMOL: N/A	ENTOMOL: N/A	ENTOMOL: 4191 (Internship), 4550 (Capstone), 5110 (Forest Health Protection)
	LO#15: Achieve an ethical framework for inquiry and action in science and society	PLNTPTH: 2001 (Social Issues)	PLNTPTH: N/A	PLNTPTH: 4191 (Internship), 5603 (Dis. Mgt.), 5604 (Capstone)

	that includes entrepreneurship and business; collaboration; political and community engagement; and environmental stewardship.	ENTOMOL: N/A	ENTOMOL: 4550 (Capstone)	ENTOMOL: 4191 (Internship)

I. MEANS TO EVALUATE ACHIEVEMENT OF PROGRAM GOALS

A. Evaluation of the students

1. Classroom-based assessments - Learning Outcomes

   Evaluation of LO#1-13 will be assessed through classroom examinations, quizzes, laboratory reports, written and oral assignments. The required plant pathology classes for the major cover a majority of the learning outcomes: ENR 300.01 and ENR 200.02 (Soil Science Lecture and Laboratory); HCS 2200 (Science of Sustainable Plant Production); HCS 4422 (Principles of Weed Ecology and Management); PLNTBIO 436 (Intro Plant Physiology); PLNTPTH 5603 (Plant Disease Management), PLNTPTH 3001/3001 or 6001/6002 (General Plant Pathology Lecture and Laboratory); ENTOMOL 34600/3000 (Intro to Insect Science/General Entomology); and ENTOMOL 3601/3602/3603 (General Insect Pest Mgt/Landscape Entomol/Agricultural Entomol).

   PLNTPTH/ENTOMOL 5604 (Problem-Based Studies in Plant Health) is a newly proposed capstone course that offers the opportunity for students to integrate information and skills from several disciplines to address a real-world situation in the area of plant health. This course is specifically designed to fulfill LO #5, 7, 8, 9, 10, 13, 14 and 15. Students will be evaluated in written assignments, an oral presentation and class participation.

   LO #1-7 (Foundational Knowledge) will also be covered and reinforced in additional courses: Biological Sciences requirement (2 semesters); Physical Sciences requirement (2 semesters); and the Plant Health Management electives for the major. Classroom examinations, quizzes, laboratory reports, written and oral assignments will also be used to assess student performance.

2. Internship and Honors project

   The internship requirement, including student presentation, provides an opportunity to evaluate LO #8, 9, 10, 13, 14 and 15, and depending on the project topic, may also include LO #1, 2, 3, 4, 5, 6, 7, 11, 12. For Honors students, the honors project, thesis and examination provide an more in-depth opportunity to evaluate LO # 1, 8, 9 and 10.

B. Evaluation of the courses

1. Student feedback

   Student feedback will be collected through the Student Evaluation of Instruction (SEI) and narrative evaluations administered towards the end of each term in each course. Narrative evaluations, which are anonymous, ask for student feedback on the course content, delivery method and the effectiveness of the instructor. Student feedback is also sought informally through discussions with students.

2. Instructor feedback

Department chair meets with faculty and instructors to discuss course outcomes, teaching methods and related issues. For faculty, this is part of the annual program review process.

3. Staggered course reviews

Courses will be reviewed by their respective departments, and for courses with integrated content, jointly with Academic Affairs Committee members from Entomology and Plant Pathology, in regards to content, quality of instruction, and course structure. The committee(s) will consider student evaluations (SEI and narrative evaluations), faculty self assessment of course, and student interviews. Specific attention will be given to how each course accomplishes the learning objectives they are prescribed (see Learning Outcome-Course Matrix table above).

C. Evaluation of the program and curriculum

1. Program characteristics/metrics

Several types of data are collected and monitored annually and reported to CFAES as part of annual program review of departments. In particular, the categories below are used to guide program changes:

Total Enrollment (Plant Health Management Majors); Career Placement at Graduation and current employment; Honors Enrollment; College, University, Regional and National Recognition; Domestic Diversity Enrollment - Gender; Domestic Diversity Enrollment - Minorities; Retention (freshman to sophomore); 4-yr Graduation Rate; 6-yr Graduation Rate; Credit Hours Generated (course enrollments); CFAES Undergraduate Research Forum; Denman Undergraduate Research Forum; SEI department mean

Other data collected and reported to CFAES:

Total Number of Freshmen Applicants; Incoming Freshmen; Incoming Transfer Students (total); Incoming ATI Transitioning Students; Study Abroad; CFAES/SENR Ambassadors; AZP Members; Towers Honorary; CFAES Top 20 Seniors; OSU Outstanding Seniors

2. Alumni Reviews

Exit interviews will be conducted with Plant Health Management graduates by undergraduate advisors or the department chairs to discuss the program as whole, individual courses, and quality of education. These discussions will be key points of assessment to guide future development of the program. Student feedback will be considered in decisions that require incremental changes, or members of the Entomology and Plant Pathology Academic Affairs Committees will assess areas of need and develop plans for program enhancement.

Within four years of graduation, academic staff will send each graduate a questionnaire. The questionnaire will assess how the graduate feels the program enabled them to obtain a job in the field, prepared them for their careers, and suggested changes. Questionnaire

results will be shared with the Department Chairs and the Academic Affairs Committees from the two departments to identify key strengths and challenges to address.

II. USES OF THE ASSESSMENT DATA

A. Students

Instructors assess student performance on the classroom assignments, provide feedback and make suggestions for improvement. Additional assistance and resources are also made available to students as appropriate.

Guidance and feedback are provided to students regarding their internship experiences. Honors students work with a faculty member and are advised throughout the course of their project on a one-on-one basis.

B. Courses

1. Student feedback

   Each instructor uses the student evaluations/narrative comments to self assess course content and delivery methods, and to guide changes. Areas of strength and weakness are identified and adjustments are made accordingly. The department chairs and academic affairs committees from Entomology and Plant Pathology will monitor evaluations and course enrollment trends and engage faculty/instructors in discussions about their courses.

   Faculty and instructors submit requests and recommendations on teaching facilities, equipment and technology upgrades to the department chairs.

2. Instructor feedback

   Faculty and instructors are assessed by their respective department(s) and department chairs.

3. Staggered course reviews

   Entomology and Plant Pathology academic affairs committees will meet jointly to discuss areas of concern, with specific attention to courses that do not adequately cover the expected learning objectives. Faculty/instructors will be asked to alter the curriculum to do so, or work with the committee to insure that the objective is covered in another required course.

C. Program/Curriculum

1. Institutional Assessment (Department, CFAES, and University)

   The major program will be evaluated annually by CFAES Associate Dean as part of the annual program review. Periodic evaluations of the program are made by the department chairs, the academic affairs committees from each department, and the CFAES Committee on Academic Affairs.

   The academic affairs committees of Plant Pathology and Entomology may make assessments and adjustments in course requirements if warranted.

Issues that require department input are brought before the faculty and senior staff at department meetings. Recruitment strategies and plans will be updated annually.

Undergraduate Program faculty and staff frequently communicate with Plant Health Management majors on schedule of courses and related issues.