From:	Smith, Randy
To:	Klinger, Ellen; Osborne, Jeanne
Cc:	Leite, Fabio; Reed, Katie; Smith, Randy; Miriti, Maria; Duffy, Lisa; Hunt, Ryan; Strange, Jamie; Christy, Ann; Kress, Cathann
Subject:	Proposal to revise the PhD and Graduate Minor in Entomology
Date:	Tuesday, January 16, 2024 10:24:08 AM
Attachments:	image001.png

Ellen and Jeanne:

The proposal from the Department of Entomology to revise the PhD and Graduate Minor programs in Entomology was approved by the Council on Academic Affairs at its meeting on January 10, 2024. Thank you for attending the meeting to respond to questions/comments.

No additional level of internal approval is necessary. This action will be included in the Council's next Annual Activities Report to the University Senate (July 2024).

The Office of the University Registrar will work you with any implementation issues.

Please keep a copy of this message for your file on the proposal and I will do the same for the file in the Office of Academic Affairs.

If you have any questions please contact the Chair of the Council, Professor Fábio Leite (.11), or me.

Randy

THE OHIO STATE UNIVERSITY

W. Randy Smith, Ph.D.
Vice Provost for Academic Programs
Office of Academic Affairs
University Square South, 15 E. 15th Avenue, Columbus, OH 43201
614-292-5881 Office
smith.70@osu.edu
Assisted by:
Katie Reed
Executive Assistant
(614) 292-5672
reed.901@osu.edu

TO: Randy Smith, Vice Provost for Academic Programs

FROM: Graduate School Curriculum Services

DATE: **12/12/2023**

RE: Proposal to **Revise the Ph.D and Graduate Minor in Entomology** in **The College of Food, Agricultural and Environmental Sciences.**

The **Entomology Department** in the **College of Food, Agricultural and Environmental Sciences** is proposing a **Revision to the Ph.D and Graduate Minor**.

The proposal was received by the Graduate School on **6/16/2023.** The combined GS/CAA subcommittee first reviewed the proposal on **11/16/2023** and requested minor revisions. After further communication with the program and OTDI, all concerns were resolved. The proposal is now forwarded to CAA for review.

THE OHIO STATE UNIVERSITY

College of Food, Agricultural, and Environmental Sciences

Academic Programs
100 Agricultural Administration
2120 Fyffe Road
Columbus, OH 43210

614-292-6891 Phone
614-292-1218 Fax

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September 1, 2023

Vice Provost W. Randy Smith
Office of Academic Affairs
203 Bricker Hall
190 North Oval Mall

Dear Vice Provost Smith,

The College of Food, Agricultural, and Environmental Sciences is requesting Council on Academic Affairs approval for revisions to the Ph.D and Graduate Minor in the Department of Entomology as outlined in the attached document.

The Department of Entomology proposes the removal of a course that is no longer offered in the Department (ENTMLGY 5001) and the addition of additional elective options to these graduate programs.

This proposal has been approved by the Department of Entomology and by the College of Food, Agricultural, and Environmental Sciences Committee on Academic Affairs. Please let me know if any additional information is needed in support of this request.

Sincerely,

Jeanne M. Osborne

Jeanne Osborne
Assistant Dean for Academic Affairs
College of Food, Agricultural, and Environmental Sciences
Osborne.2@osu.edu
Tel: 614-292-2389

Cc: Dr. David Barker, Dr. Ellen Klinger, Dr. Ann Christy

THE OHIO STATE UNIVERSITY College of Food, Agricultural, and Environmental Sciences
Department of Entomology
216 Kottman Hall
2021 Coffey Rd.
Columbus, OH 43210

614-292-9325 Phone
614-292-7162 Fax
http://entomology.osu.edu

DATE: August 30, 2023
TO: Jeanne Osborne, Assistant Dean Academic Affairs
FROM: Ellen Klinger, Assistant Professor Professional Practice
RE: Modifications of ENTMLGY programs

The Entomology department is requesting modification of the program descriptions for two of our graduate programs, Ph. D. and the Graduate Minor. Some changes are to be made throughout these degree plans including the removal of a no longer offered elective and the addition of new classes as electives in these degree plans. We do not anticipate the removal of classes to be an issue for any current students, as ENTMLGY 5001 has not been offered for a minimum of 6 years. This update will improve the number of offerings available to our students and reflect the current curriculum.

Summary of the changes:

Graduate Program in Entomology, Ph.D and Graduate Minor in Entomology: We wish to remove ENTMLGY 5001 as an elective under these degree plans. We would request the addition of ENTMLGY 5150, Pollinator Biology and Conservation (2cr; spring of even years) and ENTMLGY 5121, Insect Pathology (3cr, spring) and ENTMLGY 6702, Entomological Techniques and Data Analysis, (2cr, autumn) to the elective lists of the degree plans. In addition to the Graduate Minor we would like to add the class ENTMLGY 5610, Greenhouse Plant Health and Pest Management (3cr, autumn) to the elective list.

After departmental committee approvals, the faculty voted to approve the changes to the electives on February 27th, 2023 .

Please let me know if there are additional questions or clarifications needed.

Ellen L Klinger

Ellen Klinger, Associate Professor Entomology

CURRENT

Graduate Program in Entomology: Ph.D.

All Ph.D. students are required to take all four of the following entomology fundamentals courses (11 credits):

Course	Title	Credits	Term
ENTMLGY 6210	Evolution and Diversity of Insects	4	spring of odd years
ENTMLGY 6310	Insect Physiology and Molecular Biology	3	autumn of odd years
ENTMLGY 6320	Experimental Insect Physiology and Molecular Biology	1	autumn of odd years
ENTMLGY 6410	Insect Ecology and Evolutionary Processes	3	autumn of even years

All Ph.D. students are required to take all three of the following professional development courses (6 credits):

Course	Title	Credits	Term
ENTMLGY 7910	The Nature and Practice of Science	2	spring of even years
ENTMLGY 7920	Presentation Skills for Scientists	2	spring of odd years
ENTMLGY 7930	Scientific Writing and Grant Proposal Development	2	autumn of odd years

All Ph.D. students are required to take all five of the following supplemental training courses, to instill an understanding of the breadth of the discipline of entomology, and to ensure that students can analyze and interpret data (minimum of 4 credits, plus research credits):

Course	Title	Credits	Term
ENTMLGY 8000	Entomology Seminar [a]	1	autumn & spring
ENTMLGY 8800	Research and Training Seminar [b]	1	autumn
ENTMLGY 8998	Research in Entomology, PhD Pre-candidacy [c]	(various)	autumn, spring, summer
ENTMLGY 8999	Research in Entomology, PhD Post-candidacy [c]	(various)	autumn, spring, summer
(various; see Appendix 1)	One course in statistics or data analysis or experimental design (must be upper level [4xxx or higher])	Minimum of 2	(various)

[a] Students are encouraged to enroll in Entomology Seminar every semester, but it is required only once.
[b] Students should enroll in Research and Training Seminar the first Autumn semester of their graduate program.
[c] Ph.D. students will take a combination of pre- and post- candidacy research as determined by their degree progress

In addition to the above requirements, students may choose elective courses based on their interests or recommendations by their advisory committees. These electives may include any of the entomology courses at the 5000 level or higher, or courses offered in other units at the 4000 level or higher. Electives offered by our unit are listed in Appendix 2 on page 2. We no longer offer our own course in Systems Analysis, but we strongly recommend that our students take a course in systems analysis as offered by other departments, such as one of those shown in Appendix 3 on page 2.

In addition to course requirements, all entomology Ph.D. students are required to assist in teaching one course in entomology or introductory biology, either as an employed Graduate Teaching Associate, or by enrolling in our ENTMLGY 6501 (Mentored Teaching) course, for a minimum of 1 credit hour.

Note that petitions to the Graduate Studies Committee can be made to exclude or replace any required course if the student can provide evidence of a similar course taken at OSU or elsewhere.

The minimum total number of semester credit hours required for Entomology is 80
Total number of required course credits, excluding research credits is 21
Number of credit hours for research and electives is 59

Guidelines for number of credit hours per term:

Program & status	Position	Term	Minimum required by Graduate School	Recommended by Dept. of Entomology
Ph.D., pre-candidacy	Graduate Teaching (GT) and Research Associates (GA)	autumn or spring	8	16
		summer	4	8
	Graduate Fellow	autumn or spring	12	16
		summer	6	8
Ph.D., post-candidacy	Any	autumn or spring	3	3
		summer	3	3

Appendix 1: List of some choices for a course in statistics, data analysis, or experimental design*

Course #	Course Name	Credits	Term	Pre-requisite
STAT 5301	Intermediate Data Analysis I	4	autumn, spring	Math 1075 or instructor permission
STAT 5302	Intermediate Data Analysis II	3	autumn, spring	STAT 5299, 5301, or instructor permission
STAT 6450	Applied Regression Analysis	4	autumn	STAT 6201, or equivalent
STAT 6530	Introduction to Spatial Statistics	2	spring	STAT 6450, 6950, or Geog 883.02; or instructor permission
STAT 6620	Environmental Statistics	2	spring (?)	STAT 5302, 6450, 6910, or Geog 683 or 833.01; or instructor permission
MOLGEN 5650	Analysis and Interpretation of Biological Data	3	autumn	Math 1149 or 1150 or equiv.
HCS 5887	Introduction to Experimental Design	3	autumn	HCS2260 or other GE data class; or grad standing
HCS 8887	Techniques of Experimental Design	4	spring	MolGen 5650; and STAT 5301 or 5299
PLNTPTH 8300	Special Topics: statistics	2	spring	none
ENR 8780	Quantitative Methods for Environment and Natural Resources	3	spring	STAT 5302 or equiv., and grad standing; or instructor permission
ANIMSCI 7000	Applied Biometrics	3	autumn	STAT 5301 or equiv.
GEOG 5100	Spatial Data Analysis	3	autumn	STAT 1450 or above

*note, enrollment in STAT 5760, Statistical Consulting Support, does not fulfill this requirement.

Appendix 2: Electives offered by the Department of Entomology

Course	Title	Credits	Term
ENTMLGY 5001	Entomological and Environmental Approaches to Fly Fishing	3	autumn
ENTMLGY 5060	Practical Experiences in Plant Health: Insects & Diseases of Plants	2	summer
ENTMLGY 5110	Ecology and Management of Pathogens and Insects Affecting Trees in Forest and Urban Environments	3	spring of odd years
ENTMLGY 5350.01	Taxonomy and Behavior of Aquatic Invertebrates	3	autumn of even years
ENTMLGY 5490	Insect Behavior: Mechanisms and Function	3	spring of odd years
ENTMLGY 5500	Biological Control of Arthropod Pests	3	spring
ENTMLGY 5600	Principles and Applications of Integrated Pest Management	3	spring
ENTMLGY 5604	Capstone Course: Problem-Based Studies in Plant Health	2	spring
ENTMLGY 5605	Vector Biology and Vector Borne Diseases	3	autumn
ENTMLGY 5608	Turfgrass Insect and Mite Pests: Identification, Biology and Management	2	spring
ENTMLGY 5609	Landscape Ornamental Plant Insect and Mite Pests – Identification, Biology and Management	3	spring
ENTMLGY 5610	Greenhouse Plant Health and Pest Management	3	autumn
ENTMLGY 5800	Pesticide Science	3	autumn, spring
ENTMLGY 6193	Individual Studies	1-6	autumn, spring, summer
ENTMLGY 6194	Group Studies	1-3	autumn, spring, summer
ENTMLGY 6501	Mentored Teaching in Entomology	1-3	autumn, spring
ENTMLGY 6502	Mentored Extension Experience in Entomology	1-3	autumn, spring, summer
ENTMLGY 6703	Molecular Techniques and Data Analysis	2	spring of even years
ENTMLGY 7300	Plant Health Management Seminar	1	autumn
ENTMLGY 7890	Special Topics	1-3	any

Appendix 3: List of some choices for an elective course in systems analysis; others also possible.

Course #	Course Name	Credits	Term
GEOG 5226	Spatial Simulation and Modeling in GIS	3	autumn
EEOB 7220	Modeling in Evolutionary Ecology	4	autumn
VETPREV 8830	Modeling Transmission Processes and Control of Infectious Diseases in Humans and Animals	3	autumn
PUBH-EPI 5421	Mathematics of Infectious Disease Dynamics	3	spring
PLNTPTH 7002	Plant Disease Epidemiology	3	spring

CURRENT WITH CHANGES HIGHLIGHTED

Graduate Program in Entomology: Ph.D.

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(various; see Appendix 1)	One course in statistics or data analysis or experimental design (must be upper level [4xxx or higher])	Minimum of 2	(various)

[a] Students are encouraged to enroll in Entomology Seminar every semester, but it is required only once.
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[c] Ph.D. students will take a combination of pre- and post- candidacy research as determined by their degree progress

In addition to the above requirements, students may choose elective courses based on their interests or recommendations by their advisory committees. These electives may include any of the entomology courses at the 5000 level or higher, or courses offered in other units at the 4000 level or higher. Electives offered by our unit are listed in Appendix 2 on page 2. We no longer offer our own course in Systems Analysis, but we strongly recommend that our students take a course in systems analysis as offered by other departments, such as one of those shown in Appendix 3 on page 2.

In addition to course requirements, all entomology Ph.D. students are required to assist in teaching one course in entomology or introductory biology, either as an employed Graduate Teaching Associate, or by enrolling in our ENTMLGY 6501 (Mentored Teaching) course, for a minimum of 1 credit hour.

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		summer	6	8
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MOLGEN 5650	Analysis and Interpretation of Biological Data	3	autumn	Math 1149 or 1150 or equiv.
HCS 5887	Introduction to Experimental Design	3	autumn	HCS2260 or other GE data class; or grad standing
HCS 8887	Techniques of Experimental Design	4	spring	MolGen 5650; and STAT 5301 or 5299
PLNTPTH 8300	Special Topics: statistics	2	spring	none
ENR 8780	Quantitative Methods for Environment and Natural Resources	3	spring	STAT 5302 or equiv., and grad standing; or instructor permission
ANIMSCI 7000	Applied Biometrics	3	autumn	STAT 5301 or equiv.
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ENTMLGY 5110	Ecology and Management of Pathogens and Insects Affecting Trees in Forest and Urban Environments	3	spring of odd years
ENTMLGY 5121	Insect Pathology	3	Spring of odd years
ENTMLGY 5150	Pollinator Conservation and Biology	2	spring of even years
ENTMLGY 5350.01	Taxonomy and Behavior of Aquatic Invertebrates	3	autumn of even years
ENTMLGY 5490	Insect Behavior: Mechanisms and Function	3	spring of odd years
ENTMLGY 5500	Biological Control of Arthropod Pests	3	spring
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ENTMLGY 5604	Capstone Course: Problem-Based Studies in Plant Health	2	spring
ENTMLGY 5605	Vector Biology and Vector Borne Diseases	3	autumn
ENTMLGY 5608	Turfgrass Insect and Mite Pests: Identification, Biology and Management	2	spring
ENTMLGY 5609	Landscape Ornamental Plant Insect and Mite Pests – Identification, Biology and Management	3	spring
ENTMLGY 5610	Greenhouse Plant Health and Pest Management	3	autumn
ENTMLGY 5800	Pesticide Science	3	autumn, spring
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ENTMLGY 6501	Mentored Teaching in Entomology	1-3	autumn, spring
ENTMLGY 6502	Mentored Extension Experience in Entomology	1-3	autumn, spring, summer
ENTMLGY 6702	Entomological Techniques and Data Analysis	2	autumn
ENTMLGY 6703	Molecular Techniques and Data Analysis	2	spring of even years
ENTMLGY 7300	Plant Health Management Seminar	1	autumn
ENTMLGY 7890	Special Topics	1-3	any

Appendix 3: List of some choices for an elective course in systems analysis; others also possible.

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VETPREV 8830	Modeling Transmission Processes and Control of Infectious Diseases in Humans and Animals	3	autumn
PUBH-EPI 5421	Mathematics of Infectious Disease Dynamics	3	spring
PLNTPTH 7002	Plant Disease Epidemiology	3	spring

PROPOSED

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		summer	6	8
Ph.D., post-candidacy	Any	autumn or spring	3	3
		summer	3	3

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HCS 5887	Introduction to Experimental Design	3	autumn	HCS2260 or other GE data class; or grad standing
HCS 8887	Techniques of Experimental Design	4	spring	MolGen 5650; and STAT 5301 or 5299
PLNTPTH 8300	Special Topics: statistics	2	spring	none
ENR 8780	Quantitative Methods for Environment and Natural Resources	3	spring	STAT 5302 or equiv., and grad standing; or instructor permission
ANIMSCI 7000	Applied Biometrics	3	autumn	STAT 5301 or equiv.
GEOG 5100	Spatial Data Analysis	3	autumn	STAT 1450 or above

*note, enrollment in STAT 5760, Statistical Consulting Support, does not fulfill this requirement.

Appendix 2: Electives offered by the Department of Entomology

Course	Title	Credits	Term
ENTMLGY 5060	Practical Experiences in Plant Health: Insects & Diseases of Plants	2	summer
ENTMLGY 5110	Ecology and Management of Pathogens and Insects Affecting Trees in Forest and Urban Environments	3	spring of odd years
ENTMLGY 5121	Insect Pathology	3	Spring of odd years
ENTMLGY 5150	Pollinator Conservation and Biology	2	spring of even years
ENTMLGY 5350.01	Taxonomy and Behavior of Aquatic Invertebrates	3	autumn of even years
ENTMLGY 5490	Insect Behavior: Mechanisms and Function	3	spring of odd years
ENTMLGY 5500	Biological Control of Arthropod Pests	3	spring
ENTMLGY 5600	Principles and Applications of Integrated Pest Management	3	spring
ENTMLGY 5604	Capstone Course: Problem-Based Studies in Plant Health	2	spring
ENTMLGY 5605	Vector Biology and Vector Borne Diseases	3	autumn
ENTMLGY 5608	Turfgrass Insect and Mite Pests: Identification, Biology and Management	2	spring
ENTMLGY 5609	Landscape Ornamental Plant Insect and Mite Pests – Identification, Biology and Management	3	spring
ENTMLGY 5610	Greenhouse Plant Health and Pest Management	3	autumn
ENTMLGY 5800	Pesticide Science	3	autumn, spring
ENTMLGY 6193	Individual Studies	1-6	autumn, spring, summer
ENTMLGY 6194	Group Studies	1-3	autumn, spring, summer
ENTMLGY 6501	Mentored Teaching in Entomology	1-3	autumn, spring
ENTMLGY 6502	Mentored Extension Experience in Entomology	1-3	autumn, spring, summer
ENTMLGY 6702	Entomological Techniques and Data Analysis	2	autumn
ENTMLGY 6703	Molecular Techniques and Data Analysis	2	spring of even years
ENTMLGY 7300	Plant Health Management Seminar	1	autumn
ENTMLGY 7890	Special Topics	1-3	any

Appendix 3: List of some choices for an elective course in systems analysis; others also possible.

Course #	Course Name	Credits	Term
GEOG 5226	Spatial Simulation and Modeling in GIS	3	autumn
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PUBH-EPI 5421	Mathematics of Infectious Disease Dynamics	3	spring
PLNTPTH 7002	Plant Disease Epidemiology	3	spring

CURRENT

Graduate Minor in Entomology

Coordinator for Graduate Minor: Reed Johnson, Johnson.5005@osu.edu

Rationale statement: The Graduate Minor in Entomology is based on entomological coursework and is available to any student enrolled in a MS or Ph.D. degree in any department other than entomology at the Ohio State University. There is a need for such a minor because many students are now looking for a broader training beyond their majors. Entomology is an excellent choice for a graduate minor because it can provide job opportunities for graduates as specialists in Entomology and also because insects serve as excellent model systems for fundamental research. This graduate minor will be of particular interest to students enrolled in graduate programs in Horticulture and Crop Science, Plant Pathology, the School of Environment and Natural Resources, Animal Sciences, the medical and veterinary schools, and the Environmental Science Graduate Program (ESGP). For example, ESGP students who work with entomology faculty would benefit tremendously from the entomology minor because they would acquire more fundamental knowledge about insects and how to work with them. Such disciplinary depth is expected of all interdisciplinary scientists according to a recent study on interdisciplinary training by the National Academies of Sciences. Our entomology courses have been designed to provide a solid understanding of entomology to graduate students both in Entomology and in other degree programs.

Curriculum: All students seeking a Graduate Minor in Entomology will take a minimum of 10 credit hours of coursework, including two required courses in General Entomology and the remainder from elective courses as listed in Table 1. At least one elective must be at the 6000-level or higher. Any student who has previously taken general entomology must take 10 credit hours of elective entomology courses, including at least one at the 6000-level or higher.

Table 1: Courses for the graduate minor in Entomology.

Status	Course	Title	Credits	Term*
required	ENTMLGY 4000	General Entomology Lecture	3	AU, SP
required	ENTMLGY 4001	General Entomology Laboratory	1	AU, SP
elective	ENTMLGY 4440H	Honors Social Insects	3	SP
elective	ENTMLGY 4601	General Insect Pest Management	2	AU
elective	ENTMLGY 4607	Veterinary Entomology	2	AU, SP
elective	ENTMLGY 5001	Entomological and Environmental Approaches to Fly Fishing	3	AU
elective	ENTMLGY 5060	Practical Experiences in Plant Health: Insects & Diseases of Plants	2	SU
elective	ENTMLGY 5110	Ecology and Management of Pathogens and Insects Affecting Trees in Forest and Urban Environments	3	SP (odd years)
elective	ENTMLGY 5350.01	Taxonomy and Behavior of Aquatic Invertebrates	3	AU (even years)
elective	ENTMLGY 5490	Insect Behavior: Mechanisms and Function	3	SP (odd years)
elective	ENTMLGY 5500	Biological Control of Arthropod Pests	3	SP
elective	ENTMLGY 5600	Principles and Applications of Integrated Pest Management	3	SP
elective	ENTMLGY 5604	Capstone course: Problem-Based Studies in Plant Health	2	SP
elective	ENTMLGY 5605	Vector Biology and Vector Borne Diseases	3	AU
elective	ENTMLGY 5608	Turfgrass Insect and Mite Pests	2	SP
elective	ENTMLGY 5609	Landscape Ornamental Plant Insect and Mite Pests	3	SP

Table 1 cc tinued

Status	Course	Title	Credits	Term*
elective	ENTMLGY 5610	Greenhouse Plant Health and Management	3	AU
elective	ENTMLGY 5800	Pesticide Science	3	AU, SP
elective	ENTMGLY 6193	Individual Studies	1-3	AU, SP. SU
elective	ENTMLGY 6210	Evolution and Diversity of Insects	4	SP (odd years)
elective	ENTMLGY 6310	Insect Physiology and Molecular Biology	3	AU (odd years)
elective	ENTMLGY 6320	Experimental Insect Physiology and Molecular Biology	1	AU (odd years)
elective	ENTMLGY 6410	Insect Ecology and Evolutionary Processes	3	AU (even years)
elective	ENTMLGY 6703	Molecular Techniques and Data Analysis	2	SP (even years)

* Term: AU = autumn, SP = spring; SU = summer

CURRENT WITH CHANGES HIGHLIGHTED

Graduate Minor in Entomology

Coordinator for Graduate Minor: Reed Johnson, Johnson.5005@osu.edu

Rationale statement: The Graduate Minor in Entomology is based on entomological coursework and is available to any student enrolled in a MS or Ph.D. degree in any department other than entomology at the Ohio State University. There is a need for such a minor because many students are now looking for a broader training beyond their majors. Entomology is an excellent choice for a graduate minor because it can provide job opportunities for graduates as specialists in Entomology and also because insects serve as excellent model systems for fundamental research. This graduate minor will be of particular interest to students enrolled in graduate programs in Horticulture and Crop Science, Plant Pathology, the School of Environment and Natural Resources, Animal Sciences, the medical and veterinary schools, and the Environmental Science Graduate Program (ESGP). For example, ESGP students who work with entomology faculty would benefit tremendously from the entomology minor because they would acquire more fundamental knowledge about insects and how to work with them. Such disciplinary depth is expected of all interdisciplinary scientists according to a recent study on interdisciplinary training by the National Academies of Sciences. Our entomology courses have been designed to provide a solid understanding of entomology to graduate students both in Entomology and in other degree programs.

Curriculum: All students seeking a Graduate Minor in Entomology will take a minimum of 10 credit hours of coursework, including two required courses in General Entomology and the remainder from elective courses as listed in Table 1. At least one elective must be at the 6000-level or higher. Any student who has previously taken general entomology must take 10 credit hours of elective entomology courses, including at least one at the 6000-level or higher.

Table 1: Courses for the graduate minor in Entomology.

Status	Course	Title	Credits	Term*
required	ENTMLGY 4000	General Entomology Lecture	3	AU, SP
required	ENTMLGY 4001	General Entomology Laboratory	1	AU, SP
elective	ENTMLGY 4440H	Honors Social Insects	3	SP
elective	ENTMLGY 4601	General Insect Pest Management	2	AU
elective	ENTMLGY 4607	Veterinary Entomology	2	AU, SP
~~elective~~	~~ENTMLGY 5001~~	~~Entomological and Environmental Approaches to Fly Fishing~~	~~3~~	~~AU~~
elective	ENTMLGY 5060	Practical Experiences in Plant Health: Insects & Diseases of Plants	2	SU
elective	ENTMLGY 5121	Insect Pathology	3	SP(odd years)
elective	ENTMLGY 5150	Pollinator conservation and biology	2	SP(even years)
elective	ENTMLGY 5110	Ecology and Management of Pathogens and Insects Affecting Trees in Forest and Urban Environments	3	SP (odd years)
elective	ENTMLGY 5350.01	Taxonomy and Behavior of Aquatic Invertebrates	3	AU (even years)
elective	ENTMLGY 5490	Insect Behavior: Mechanisms and Function	3	SP (odd years)
elective	ENTMLGY 5500	Biological Control of Arthropod Pests	3	SP
elective	ENTMLGY 5600	Principles and Applications of Integrated Pest Management	3	SP
elective	ENTMLGY 5604	Capstone course: Problem-Based Studies in Plant Health	2	SP
elective	ENTMLGY 5605	Vector Biology and Vector Borne Diseases	3	AU
elective	ENTMLGY 5608	Turfgrass Insect and Mite Pests	2	SP

elective	ENTMLGY 5609	Landscape Ornamental Plant Insect and Mite Pests	3	SP
elective	ENTMLGY 5610	Greenhouse Plant Health and Pest Management	3	AU
elective	ENTMLGY 6702	Entomological Techniques and Data Analysis	2	AU

Table 1 cc tinued

Status	Course	Title	Credits	Term*
elective	ENTMLGY 5610	Greenhouse Plant Health and Management	3	AU
elective	ENTMLGY 5800	Pesticide Science	3	AU, SP
elective	ENTMGLY 6193	Individual Studies	1-3	AU, SP. SU
elective	ENTMLGY 6210	Evolution and Diversity of Insects	4	SP (odd years)
elective	ENTMLGY 6310	Insect Physiology and Molecular Biology	3	AU (odd years)
elective	ENTMLGY 6320	Experimental Insect Physiology and Molecular Biology	1	AU (odd years)
elective	ENTMLGY 6410	Insect Ecology and Evolutionary Processes	3	AU (even years)
elective	ENTMLGY 6703	Molecular Techniques and Data Analysis	2	SP (even years)

* Term: AU = autumn, SP = spring; SU = summer

PROPOSED

Graduate Minor in Entomology

Coordinator for Graduate Minor: Reed Johnson, Johnson.5005@osu.edu

Rationale statement: The Graduate Minor in Entomology is based on entomological coursework and is available to any student enrolled in a MS or Ph.D. degree in any department other than entomology at the Ohio State University. There is a need for such a minor because many students are now looking for a broader training beyond their majors. Entomology is an excellent choice for a graduate minor because it can provide job opportunities for graduates as specialists in Entomology and also because insects serve as excellent model systems for fundamental research. This graduate minor will be of particular interest to students enrolled in graduate programs in Horticulture and Crop Science, Plant Pathology, the School of Environment and Natural Resources, Animal Sciences, the medical and veterinary schools, and the Environmental Science Graduate Program (ESGP). For example, ESGP students who work with entomology faculty would benefit tremendously from the entomology minor because they would acquire more fundamental knowledge about insects and how to work with them. Such disciplinary depth is expected of all interdisciplinary scientists according to a recent study on interdisciplinary training by the National Academies of Sciences. Our entomology courses have been designed to provide a solid understanding of entomology to graduate students both in Entomology and in other degree programs.

Curriculum: All students seeking a Graduate Minor in Entomology will take a minimum of 10 credit hours of coursework, including two required courses in General Entomology and the remainder from elective courses as listed in Table 1. At least one elective must be at the 6000-level or higher. Any student who has previously taken general entomology must take 10 credit hours of elective entomology courses, including at least one at the 6000-level or higher.

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elective	ENTMLGY 5121	Insect Pathology	3	SP(odd years)
elective	ENTMLGY 5150	Pollinator conservation and biology	2	SP(even years)
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elective	ENTMLGY 5500	Biological Control of Arthropod Pests	3	SP
elective	ENTMLGY 5600	Principles and Applications of Integrated Pest Management	3	SP
elective	ENTMLGY 5604	Capstone course: Problem-Based Studies in Plant Health	2	SP
elective	ENTMLGY 5605	Vector Biology and Vector Borne Diseases	3	AU
elective	ENTMLGY 5608	Turfgrass Insect and Mite Pests	2	SP
elective	ENTMLGY 5609	Landscape Ornamental Plant Insect and Mite Pests	3	SP
elective	ENTMLGY 5610	Greenhouse Plant Health and Pest Management	3	AU
elective	ENTMLGY 6702	Entomological Techniques and Data Analysis	2	AU

Table 1 cc tinued

Status	Course	Title	Credits	Term*
elective	ENTMLGY 5610	Greenhouse Plant Health and Management	3	AU
elective	ENTMLGY 5800	Pesticide Science	3	AU, SP
elective	ENTMGLY 6193	Individual Studies	1-3	AU, SP. SU
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elective	ENTMLGY 6410	Insect Ecology and Evolutionary Processes	3	AU (even years)
elective	ENTMLGY 6703	Molecular Techniques and Data Analysis	2	SP (even years)

* Term: AU = autumn, SP = spring; SU = summer

THE OHIO STATE UNIVERSITY

Curriculum Proposal Checklist

Title of Program: Graduate Minor in Entomology

Effective term: Spring 2024 **College:** Food, Agricultural, and Environmental Sciences

New/Establish: ☐ **Secondary Major Eligible:** ☐ **Academic Unit:** Entomology

Revise: ☑ **50% Revision:** ☐ **Mark Up:** ☐ **Program Contact:** klinger.80@osu.edu

Terminate: ☐ **Suspend:** ☐ **Certificate Category*:**

Degree/Credential: Minor

Program of Study : Graduate Program **Title:** Entomology

Code:

Program Focus*:

Credit hours to degree/credential: 10 **Is this a change to the current total?** ☐ Yes ☑ No

Program offered only online? ☐ Yes ☑ No **If yes, is there a signed MOU with ODEE?** ☐ Yes ☐ No

Campus(es) where offered: ☑ Columbus ☐ ATI ☐ Lima ☐ Mansfield ☐ Marion ☐ Newark

Rationale: We need to update our electives on this degree to improve transparency of coursework offered. Electives removed have not been taught for at least 5 years with no future plan to teach and new courses have successfully been taught at least once and plans are to continue offering.

Student Curriculum Sheet Required: ☑

Four Year (or appropriate) Plan: ☐

Academic Unit Curriculum Committee approval date: 2/27/23

College Curriculum Committee approval date: 6/15/23

Graduate School Council approval date*:

Regional Campus approval date*:

Council on Academic Affairs approval date:

University Senate approval date*:

Board of Trustees approval date*:

ODHE approval date*:

* If applicable

THE OHIO STATE UNIVERSITY

Curriculum Proposal Checklist

Title of Program: Graduate Program in Entomology, PhD

Effective term: Spring 2024 **College:** Food, Agricultural, and Environmental Sciences

New/Establish: ☐ **Secondary Major Eligible:** ☐ **Academic Unit:** Entomology

Revise: ☑ **50% Revision:** ☐ **Mark Up:** ☐ **Program Contact:** klinger.80@osu.edu

Terminate: ☐ **Suspend:** ☐ **Certificate Category*:**

Degree/Credential: Doctor of Philosophy

Program of Study : Graduate Program **Title:** Entomology

Code:

Program Focus*:

Credit hours to degree/credential: 80 **Is this a change to the current total?** ☐ Yes ☑ No

Program offered only online? ☐ Yes ☑ No **If yes, is there a signed MOU with ODEE?** ☐ Yes ☐ No

Campus(es) where offered: ☑ Columbus ☐ ATI ☐ Lima ☐ Mansfield ☐ Marion ☐ Newark

Rationale: We need to update our electives on this degree to improve transparency of coursework offered. Electives removed have not been taught for at least 5 years with no future plan to teach and new courses have successfully been taught at least once and plans are to continue offering.

Student Curriculum Sheet Required: ☑

Four Year (or appropriate) Plan: ☐

Academic Unit Curriculum Committee approval date: 2/27/23

College Curriculum Committee approval date: 6/15/23

Graduate School Council approval date*:

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Council on Academic Affairs approval date:

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Board of Trustees approval date*:

ODHE approval date*:

* If applicable