

From: [Osborne, Jeanne](#)
To: [Smith, Randy](#)
Cc: [Violet, Cynthia](#); [Barker, David](#); [Reed, Katie](#); [Gerber, Carri](#); [Klinger, Ellen](#)
Subject: Information item for CAA: Establishment of a 1+3 pathway in Entomology at Ohio State ATI
Date: Friday, April 12, 2024 11:28:30 AM
Attachments: [image001.png](#)
[Creation 1+3 Entomology pathway.pdf](#)

Dear Dr. Smith,

Attached please find a proposal for establishment of a 1+3 pathway in Entomology at the College of Food, Agricultural, and Environmental Sciences Agricultural Technical Institute (ATI) at the Wooster Campus. The faculty at ATI and in the Department of Entomology at the Columbus campus, under the leadership of Dr. Carri Gerber, Associate Director, ATI and Dr. Ellen Klinger, Assistant Professor, Entomology have been working to develop this pathway as an identifiable point of entrance to the Entomology major, with the potential to grow enrollment in the Entomology major and provide a recognized educational and career path for students who start their educational career at the Wooster campus.

I have attached the proposal from Ohio State ATI, which includes a sample plan showing the proposed curricular pathway. This proposal has received support from the Ohio State ATI Academic Affairs Committee and the Department of Entomology and is approved by the CFAES Committee on Academic Affairs. Since this is not a proposal for a new major or degree, I believe this pathway can be shared as an informational item to the Council on Academic Affairs. However, if formal approval is needed, I will provide any required additional documentation.

Please let me know if you need additional information or clarification.

Thank you,

Jeanne



Jeanne M. Osborne | *Pronouns: She, Her, Hers*

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'Unexpected kindness is the most powerful, least costly, and most underrated agent of human change' (Bob Kerrey)



March 14, 2024

Ms. Jeanne Osborne
Assistant Dean for Academic Affairs
100E Agricultural Administration Building
2120 Fyffe Rd
Columbus, OH 43210

Dear Ms. Osborne,

This letter is a request to establish a 1+3 pathway in Entomology at Ohio State ATI.

Rationale

In recent years, students enrolling at Ohio State ATI have expressed interest in pursuing a program of study in Entomology. To help those students achieve their goals, faculty from the Department of Entomology and Ohio State ATI collaborated to develop a plan to lead students to a BS in Entomology. An Entomology faculty member serves as their advisor and students are given permission to enroll in Columbus' Entomology courses such as ENTMLGY 1100.

Students at Ohio State ATI interested in Entomology are supported through existing online ENTMLGY course offerings, the current in-person offering of ENTMLGY 2200, the presence of 8 Entomology faculty members on the Wooster Campus, and the unique resource of the United Titanium Bug Zoo to facilitate a wide variety of courses, training, and in-person experiences.

By officially establishing a 1+3 pathway in Entomology at Ohio State ATI, a program plan will be generated, allowing for students to enroll into a "named" program rather than Undeclared Major.

Projected Interest

With the establishment of a program plan, Ohio State ATI admissions can officially recruit students in Entomology, continuing students at Ohio State ATI would have an added choice to change majors, and students that are not admissible to the Columbus campus would have an established route to the Department of Entomology through Ohio State ATI. Through this recruitment strategy, we estimate 5 students per year will begin their Entomology studies on the Wooster campus.

If interest and enrollment exceed our goals, a 2+2 program may be considered in the future.

Budgetary Considerations

Establishing a 1+3 pathway in Entomology at Ohio State ATI will have no negative impact on the budget. This pathway requires no additional faculty. No additional courses are necessary, as the existing coursework for the first-year requirements of the ENTMLGY BS in Agriculture degree can be completed at Ohio State ATI.

(To facilitate enrollment into the Entomology specific orientation course, Wooster will be added as a campus of offering for ENTMLGY 1100.)

Enclosed please find the following documents:

- Proposed 1 year Entomology curriculum plan at Ohio State ATI - highlighted courses
- Advising - Four-year curriculum plan (year 1 at Ohio State ATI (highlighted courses) and years 2, 3, and 4 at OSU Columbus – Department of Entomology)
- Letter of support from the Department of Entomology

Please let me know if there are questions or if additional information or documentation is required to accompany this submission. We look forward to hearing from the FAES Academic Affairs Committee regarding next steps in the approval process.

Sincerely,



Carri A. Gerber
Associate Director
Ohio State ATI

Bachelor of Science in Agriculture

Major: Entomology (1+3 ATI) **Highlighted courses will be taken at ATI**

The entomology major couples a strong background in the biological sciences with in-depth study of insect biology and applied entomology. Students learn insect physiology, behavior, ecology and taxonomy, as well as beekeeping, veterinary and public health entomology, sustainable agriculture, and integrated pest management in agricultural, forest and urban environments. Students in this major will complete a minimum of 121 hours outlined as follows.

General Education Requirements

| Requirement | Course Options | Hours |
|--|--|---------------|
| GE Seminar | GENED 1201 | 1 |
| Writing and Information Literacy | Major requirement: ENGLISH 1110 * (or Student Choice – see below) | 3 |
| Mathematical & Quantitative Reasoning/Data Analysis | Major requirement: MATH 1150 * (or Student Choice – see below) | 5 |
| Literary, Visual and Performing Arts | Student Choice | 3 |
| Historical & Cultural Studies | Student Choice | 3 |
| Natural Science | Major requirement: BIOLOGY 1113 * (or Student Choice – see below) | 4 |
| Social & Behavioral Sciences | Major requirement: AEDECON 2001 or ECON 2001.01 * (or Student Choice – see below) | 3 |
| Race, Ethnic and Gender Diversity | Student Choice | 3 |
| Theme: Citizenship for a Diverse & Just World^a | Student Choice | 4-6 |
| Theme: Student Choice^a | Student Choice | 4-6 |
| GE Reflection | GENED 4001 | 1 |
| General Education Credit Hours: | | 34-38* |

* Indicates a pre/corequisite course for this major that also satisfies this GE category. If a student chooses an alternative course in this GE category, **they must also complete this course.**

B.S. in Agriculture Degree Requirements

| Requirement | Course Options | Hours |
|-----------------------------|--|--------------|
| College & Department Survey | GENSTDS 1201.01T (0.5) & ENTMLGY 1100 (0.5) | 1 |
| Oral Expression | AGRCOMM 3130 or COMM 2110 | 3 |
| Additional Science | BIOLOGY 1114 | 4 |
| Internship | FAES 3191 & ENTMLGY 4191 | 1-2 |
| Minor Equiv. ^b | MATH 1151 Calculus I (5) -or- MATH 1156 Calculus for the Bio. Sci. (5) EEOB 3410 Ecology (4) MOLGEN 4500 General Genetics (3) | 12 |
| Credit Hours: | | 21-22 |

^a Students complete either a 4-credit course or two 3-credit courses in each of two General Education Theme areas: Citizenship for a Diverse & Just World (required), and the student's choice of available GE Themes. If any major-required courses are identified as a GE Theme course, one course in each GE Theme area may double count in the GE and major hours. Theme courses are identified with a ♦ symbol.

^b Students in this program complete a group of courses called a minor equivalent. Declaring an additional minor is not required.

^c A limit of 3 credit hours of 4998, 4999, and/or 4999H combined may be applied towards major hours.

^d This course is only offered at the Wooster campus.

Major Supporting Coursework

| Course | Title | Hours |
|----------------------|-----------------------------|-----------|
| CHEM 1210 | General Chemistry I | 5 |
| CHEM 1220 | General Chemistry II | 5 |
| Credit Hours: | | 10 |

Major Coursework

| Course | Title | Hours |
|---------------------|---|-------|
| ENTMLGY 4000 | General Entomology | 3 |
| ENTMLGY 4001 | General Entomology Laboratory | 1 |
| ENTMLGY 5604 | Capstone: Problem-Based Studies in Plant Health | 2 |

Select one applied entomology course:

| | | |
|---------------------|---|---|
| ENTMLGY 4601 | General Insect Pest Management | 2 |
| ENTMLGY 4607 | Veterinary Entomology | 2 |
| ENTMLGY 5110 | Ecology and Mgmt. of Pathogens and Insects Affecting Trees in Forest and Urban Environments | 2 |
| ENTMLGY 5605 | Vector Biology and Vector-Borne Diseases | 3 |
| ENTMLGY 5608 | Turfgrass Insect and Mite Pests – Identification, Biology, and Management | 2 |
| ENTMLGY 5609 | Landscape Ornamental Plant Insect and Mite Pests – Identification, Biology, and Management | 2 |

Select a minimum of 11 credit hours (9 credit hours at 3000+ level) of Entomology electives from applied entomology options above and/or the following:

| | | |
|---------------------------------|--|------------------|
| ENTMLGY 2101 | Insects and Human Affairs: Pests, Plagues, Poisons, and Politics | 3 |
| ENTMLGY 2200 | Beekeeping | 3 |
| ENTMLGY 3330 or 4440H | Social Insects or Honors Social Insects | 3 |
| ENTMLGY 4998 | Undergraduate Research in Entomology | 1-3 ^c |
| ENTMLGY 4999 or 4999H | Research with Distinction or Honors Research with Distinction | 1-3 ^c |
| ENTMLGY 5001^d | Entomological and Environmental Approaches to Fly Fishing | 3 |
| ENTMLGY 5150 | Pollinator Biology and Conservation | 2 |
| ENTMLGY 5350.01 | Taxonomy and Behavior of Aquatic Invertebrates | 3 |
| ENTMLGY 5490 | Insect Behavior: Mechanisms and Function | 3 |
| ENTMLGY 5500 | Biological Control of Arthropod Pests | 3 |
| ENTMLGY 5600 | Principles and Applications of Integrated Pest Management | 3 |
| ENTMLGY 5800 | Pesticide Science | 3 |

Select an additional 16-17 crs of major electives (options list on next page)

| | |
|----------------------|-----------|
| Credit Hours: | 36 |
|----------------------|-----------|

| | |
|------------------------------------|--------------|
| General Education | 34-38 |
| Degree Requirements & Minor Equiv. | 21-22 |
| Major Supporting Courses | 10 |
| Major | 36 |
| Open Electives | 15-20 |
| Minimum Total Credit Hours | 121 |



Major Electives

Non-entomology elective course suggestions for students wishing to focus work in one of four tracks: Sustainable Insect Management (1), Insect Ecology and Conservation (2), Insects in Human and Veterinary Medicine (3) and Individualized Insect Studies (4)

| Course | Title | Hours | Suggested track |
|---------------|---|-------|-----------------|
| BIOCHEM 4511* | Introduction to Biological Chemistry | 4 | 1,3 |
| CHEM 2310 | Introductory Organic Chemistry | 4 | 2,4 |
| CHEM 2510 | Organic Chemistry I | 4 | 1,3 |
| CHEM 2520 | Organic Chemistry II | 4 | 1,3 |
| CHEM 2540 | Organic Chemistry Lab I | 2 | 1,3 |
| CHEM 2550 | Organic Chemistry Lab II | 2 | 1,3 |
| ENR 2367 | Communicating Environmental and Natural Resources Information | 3 | 1,2,3,4 |
| ENR 3000 | Soil Science | 3 | 2,4 |
| ENR 5279 | Soil Fertility | 3 | 2,4 |
| HCS 2260 | Data Analysis and Interpretation for Decision Making | 3 | 1,2,3,4 |
| HCS 5422** | Biology and Management of Weeds and Invasive Plants | 3 | 2,4 |
| MOLGEN 3436 | Introductory Plant Physiology | 3 | 1,3 |
| MOLGEN 4700 | Molecular Cell and Developmental Biology | 3 | 1,3 |
| PLNTPTH 3001 | General Plant Pathology Lecture | 3 | 2,4 |
| PLNTPTH 3002 | General Plant Pathology Lab | 2 | 2,4 |
| PLNTPTH 4597 | Contemporary Issues: Pesticides, Genetic Engineering, and the Environment | 3 | 2,4 |

* Review prerequisites

** Prerequisite of HCS 2201/2204 & 2205, or HCS 2202

Policies and General Requirements for Degree

- A minimum of 121 total credit hours. Remedial coursework (English 1109; EDUTL 1001, 1002, 1003, 1004, 1005, 1006, 1007, 1010; Mathematics 1040, 1050, 1073, 1074, 1075) do not count toward the 121-hour minimum requirement for the BS degree.
- A minimum of 30 semester hours of credit earned through regular course enrollment at this University, and regular course enrollment in the last semester in the College of Food, Agricultural, and Environmental Sciences.
- A cumulative point-hour ratio of at least 2.00 on all coursework completed at The Ohio State University as well as at least a 2.00 in the major.
- If a major-required course or major elective is a GE Theme course, two 3-4 cr courses (no more than one per theme area) is permitted to double count in the GE and major hours. GE Theme courses are indicated with a ❖ symbol.
- Students are encouraged to participate in education abroad opportunities. Consult with your advisor for how education abroad credit applies to your degree or consider the CFAES Global Option.
- Students must complete a minimum of 40 hours in major/major supporting coursework with at least 12 hours taken from the academic unit(s) offering the major at OSU in the baccalaureate program.
- Courses required in the major (including major supporting courses and major electives) may **not** be taken pass/non-pass.
- Coursework taken as open electives may include a maximum of 4 credit hours of physical activity courses (all 1139-1197 courses), and a maximum of 4 credit hours of campus music organizations.
- A college maximum of six hours of individual studies courses (x193) can be applied toward graduation; some majors may have a lower maximum.
- Students of CFAES must complete an internship of 1-2 hours as a requirement for degree. Any additional internship credit hours may count towards major hours (consult with your advisor). A college maximum of six hours of internship credit can be applied toward graduation; some majors may have a lower maximum.
- A maximum of three credits of 3488 can be applied toward graduation although some majors may have a lower maximum. A cumulative point-hour ratio of 2.0 is required to register for 3488 credit.
- Credit hours for 4999 ("with Research Distinction") and 4999H ("with Honors Research Distinction") are repeatable to maximum of six hours.
- **An application for degree must be submitted online at least two semesters prior to the intended graduation term. Application found at: <https://students.cfaes.ohio-state.edu/academics/undergraduate/graduation>**

Policies and General Requirements for Minors/Minor Equivalent

- The minor/minor equivalent must contain a minimum of 12 credit hours distinct from the major and/or additional minors (i.e., if a minor requires more than 12 credit hours, a student is permitted to overlap those hours beyond 12 with the major or with another minor).
- A 2.00 cumulative point-hour ratio is required in the minor/minor equivalent with a minimum C- grade for any course to be listed in the minor or minor equivalent (includes transfer credit).
- For programs requiring a minor: minors should be declared by the time students complete 60 hours.
- A student is permitted to count up to 6 credit-hours of transfer and/or EM credit in the minor or minor equivalent.
- Coursework graded Pass/Non-Pass cannot count in the minor. No more than 3 credit-hours of course work graded S/U may count toward the minor. Maximum of 3 credit-hours of xx93 are allowed to count in the minor.

4-Year Course Plan - Highlighted courses will be taken at ATI
B.S. in Agriculture
Major: Entomology

This model plan of study is presented as a suggested path to graduate in four years. It is intended to be a useful guide; however, each student is unique and should review the Degree Requirements for their catalog year and work with their advisor to develop an individualized course plan that best fits their personal academic background and goals.

NOTE: This sheet should not be used in isolation. To graduate in a timely manner, students must consult their academic advisor on a regular basis.

| Freshman Year | Autumn Semester | | | Spring Semester | | |
|--|--|--|-------|---|---|-------|
| Benchmarks | Course/Requirement | Course Name | Hours | Course/Requirement | Course Name | Hours |
| -Complete Math requirement -Complete at least one science -Complete English 1110.01 | GENSTDS 1201.01T | College Orientation | .5 | CHEM 1220 | General Chemistry II | 5 |
| | ENTMLGY 1100 | Dept Survey | .5 | MATH 1151 ^a | Calculus I | 5 |
| | GE Math: MATH 1150 | Precalculus | 5 | GE WIL: ENGLISH 1110 | First-Year English Comp. | 3 |
| | GE Nat Sci: BIOLOGY 1113 | Biological Sciences: Energy Transfer and Development | 4 | BIOLOGY 1114 | Biological Sciences: Form, Function, Diversity, and Ecology | 4 |
| | CHEM 1210 | General Chemistry I | 5 | GENED 1201 | GE Launch Seminar | 1 |
| Hours: 33 | | Total: | 16 | | Total: | 18 |
| Sophomore Year | Autumn Semester | | | Spring Semester | | |
| Benchmarks | Course/Requirement | Course Name | Hours | Course/Requirement | Course Name | Hours |
| -Declare minor -Complete three science courses by the end of this year -Begin to consider an internship location | ENTMLGY 4000 | General Entomology | 3 | GE Theme Choice #1 ^b | | 3-4 |
| | ENTMLGY 4001 | General Entomology Lab | 1 | Applied Entomology Course | See options | 2-3 |
| | GE Hist. & Cultural Studies | | 3 | GE R.E. & G. Diversity | | 3 |
| | GE Lit, Vis and Perf Arts | | 3 | AGRCOMM 3130 | Oral Expression | 3 |
| | GE SBS: AEDECON 2001 | Prin. of Food & Res. Econ. | 3 | Entomology Elective | | 3-4 |
| | Open Elective | | 2 | | | |
| Hours: 63 | | Total: | 15 | | Total: | 15 |
| Junior Year | Autumn Semester | | | Spring Semester | | |
| Benchmarks | Course/Requirement | Course Name | Hours | Course/Requirement | Course Name | Hours |
| -Apply to graduate -Complete internship by end of the summer -Half of major hours to be completed by the end of the year | Entomology Elective | | 3 | ENTMLGY 4191 | Internship | 2 |
| | MOLGEN 4500 | General Genetics | 3 | FAES 3191 | Internship | 0 |
| | GE Citizenship #1 ^b | | 3-4 | Entomology Elective | | 2-3 |
| | EEOB 3410 | Ecology | 4 | Major Elective | | 3-4 |
| | Major Elective | | 2-3 | Major Elective | | 3-4 |
| | | | | GE Citizenship #2 ^b (or Open Elective) | | 3 |
| Hours: 92 | | Total: | 15 | | Total: | 15 |
| Senior Year | Autumn Semester | | | Spring Semester | | |
| Benchmarks | Course/Requirement | Course Name | Hours | Course/Requirement | Course Name | Hours |
| -Meet graduation requirements -Meet with a Career Services Advisor | GE Theme Choice #2 ^b (or Open Elective) | | 3 | Open Elective | | 3-4 |
| | Major Elective | | 3-4 | ENTMLGY 5604 | Capstone: Problem-Based Studies in Plant Health | 2 |
| | Major Elective | | 3-4 | Open Elective | | 3-4 |
| | Entomology Elective | | 2-3 | Major Elective | | 3-4 |
| | GENED 4001 | GE Reflection Seminar | 1 | Open Elective | | 3-4 |
| | Open Elective | | 3 | | | |
| | | Total: | 14 | | Total: | 15 |
| Minimum total credit hours for Bachelor of Science Degree: | | | | | | 121 |

^a One possible course from approved GE list or major requirement that has multiple options, as outlined in corresponding Degree Requirements document.

^b Students complete either a 4-credit course or two 3-credit courses in each of two General Education Theme areas: Citizenship for a Diverse & Just World (required), and the student's choice of available GE Themes. If any major-required courses are identified as a GE Theme course, one course in each GE Theme area may double count in the GE and major hours. Theme courses are identified with a ♦ symbol.

4-Year Completion Checklist

| Freshman Year | Autumn Semester | | | Spring Semester | | |
|--|---------------------------|--|---|---------------------------|--|------------|
| Benchmarks | Course/Requirement | | ✓ | Course/Requirement | | ✓ |
| <input type="checkbox"/> Complete Math requirement <input type="checkbox"/> Complete at least one science <input type="checkbox"/> Complete English 1110.01 | GENSTDS 1201.01T | | | | | |
| | ENTMLGY 1100 | | | | | |
| | | | | | | |
| | | | | | | |
| Hours: _____ | Notes: _____ | | | Notes: _____ | | |
| Sophomore Year | Autumn Semester | | | Spring Semester | | |
| Benchmarks | Course/Requirement | | ✓ | Course/Requirement | | ✓ |
| <input type="checkbox"/> Complete three science courses by the end of this year <input type="checkbox"/> Begin to consider an internship location | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| Hours: _____ | Notes: _____ | | | Notes: _____ | | |
| Junior Year | Autumn Semester | | | Spring Semester | | |
| Benchmarks | Course/Requirement | | ✓ | Course/Requirement | | ✓ |
| <input type="checkbox"/> Apply to graduate <input type="checkbox"/> Complete internship by end of the summer <input type="checkbox"/> Half of major hours to be completed by the end of the year | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| Hours: _____ | Notes: _____ | | | Notes: _____ | | |
| Senior Year | Autumn Semester | | | Spring Semester | | |
| Benchmarks | Course/Requirement | | ✓ | Course/Requirement | | ✓ |
| <input type="checkbox"/> Meet graduation requirements <input type="checkbox"/> Meet with a Career Services Advisor | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| Hours: _____ | Notes: _____ | | | Notes: _____ | | |
| Total credit hours for Bachelor of Science Degree: | | | | | | 121 |



DATE: April 4, 2023

TO:

FROM: Ellen Klinger, Assistant Professor Professional Practice

RE: Creation of ATI 1+3 Pathway for ENTMLGY

The Entomology department is requesting the creation of a 1+3 Pathway between ATI and the Columbus Campus. We feel that the creation of this program will capture students who are interested in Entomology and have additional interest in the agricultural sciences. Interest has already been evidenced by existing students entering ATI and wishing to study entomology. Their pathway to entomology has insofar been informal, supported by a dedicated faculty advisor for these students. As we are working with this curricular framework currently, having a formal pathway will allow the department to robustly advertise and recruit students through this mechanism.

We hope that, through focused recruitment, to gain an enrollment of approximately 5 students per year through ATI, primarily those students interested in the tracks of sustainable insect management or individualized insect studies. Depending upon the interest and enrollment through this program, a 2+2 program will be considered in the future. A future 2+2 program as well as off sequence and remedial student enrollment at ATI is supported well through existing online ENTMLGY course offerings, the current in-person ATI offering of ENTMLGY 2200, the presence of 8 faculty members on the Wooster Campus and the unique resource of the United Titanium Bug Zoo to facilitate a wide variety of courses, training and in-person experiences.

Creation of this pathway requires no additional coursework or faculty, as the existing coursework for the first-year requirements of the ENTMLGY BS in Agriculture degree can be completed at ATI. The only adjustment will be the offering of ENTMLGY 1100 specific to the Wooster campus, and/or through online offering.

We appreciate the committee's consideration of this program. We are excited to provide this resource to future students and create this relationship between our department and ATI.

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

Ellen Klinger, Associate Professor Entomology
Committee Chair, Entomology Curriculum Committee
ATI-ENTMLGY Faculty Advisor