

Program Change Request

APPROVED BY SENATE
10/14/2024

EP.25.018_FINAL
Approved by EP 10/07/2024

Date Submitted: 04/02/24 9:46 am

Viewing: **10KS0324MS : Entomology,
MS**

Last approved: 09/06/22 11:50 am

Last edit: 09/27/24 8:04 am

Changes proposed by: Allison O'Dwyer

Catalog Pages [Entomology, MS](#)
Using this
Program

Proposal Type:

In Workflow

1. U Program Review
2. 1361 Head
3. SIB Head
4. KV Dean
5. University Librarian
6. Grad_College
7. COTE Programs
8. Provost
9. Senate EPC
10. Senate
11. U Senate Conf
12. Board of Trustees
13. IBHE
14. HLC
15. DOE
16. DMI

Approval Path

1. 04/05/24 7:58 am
Donna Butler
(dbutler):
Approved for U
Program Review
2. 04/18/24 9:22 am
Brian Allan
(ballan): Approved
for 1361 Head
3. 04/18/24 9:26 am
Brian Allan
(ballan): Approved
for SIB Head
4. 05/01/24 1:55 pm
Stephen Downie
(sdownie):
Approved for KV
Dean
5. 05/02/24 12:38
pm
Claire Stewart
(clairest):

- Approved for
University
Librarian
6. 09/11/24 3:07 pm
Allison McKinney
(agrindly):
Approved for
Grad_College
7. 09/11/24 3:45 pm
Suzanne Lee
(suzannel):
Approved for
COTE Programs
8. 09/13/24 10:30
am
Brooke Newell
(bsnewell):
Approved for
Provost

History

1. Jan 18, 2020 by
Mary Lowry
(lowry)
2. Sep 6, 2022 by
Mary Lowry
(lowry)

Major (ex. Special Education)

This proposal is
for a:
Revision

Administration Details

Official Program Name	Entomology, MS
Diploma Title	
Sponsor College	Liberal Arts & Sciences
Sponsor Department	Entomology
Sponsor Name	Brian Allan, Associate Director for Academic Affairs, School of Integrative Biology
Sponsor Email	ballan@illinois.edu

College Contact [Stephen R Downie, Associate Dean for
Curr and Academic Policy, LAS](mailto:sdownie@illinois.edu)
sdownie@illinois.edu

College Contact
Email

College Budget
Officer

College Budget
Officer Email

List the role for rollbacks (which role will edit the proposal on questions from EPC, e.g., Dept Head or Initiator) and/or any additional stakeholders. Purpose: List here who will do the editing work if proposal needs rolled back. And any other stakeholders.

[Allison O'Dwyer, Assistant Director for Academic Affairs, School of Integrative Biology](mailto:maybe@illinois.edu)
[May Berenbaum, Head, Dept of Entomology, maybe@illinois.edu](mailto:maybe@illinois.edu)
[Adam Dolezal, DGS, Dept of Entomology, adolezal@illinois.edu](mailto:adolezal@illinois.edu)
[Alex Harmon-Threatt, DGS, Dept of Entomology, aht@illinois.edu](mailto:aht@illinois.edu)

Does this program have inter-departmental administration?
No

Proposal Title

Effective Catalog Fall 2024
Term

Proposal Title (either Establish/Revise/Eliminate the Degree Name in Program Name in the College of XXXX, i.e., Establish the Bachelor of Science in Entomology in the College of Liberals Art and Sciences, include the Graduate College for Grad Programs)

Revise the Master of Science in Entomology in the College of Liberal Arts and Sciences and the Graduate College

Does this proposal have any related proposals that will also be revised during the next 6 weeks? Consider Majors, Minors, Concentrations & Joint Programs in your department. Please know that this information is used administratively to move related proposals through workflow efficiently. Example: If you are revising the BS proposal and one related concentration within the next 6 weeks, "This BS proposal (key 567) is related to the Concentration A proposal (key 145)."

This is related to Key 449, Entomology, PhD revision.

Program Justification

Provide a brief description of what changes are being made to the program.

1. Adds a list of approved Statistical or Analytical courses and adds IB 526 Seminar in Entomology.
2. Replaces IB 427 with IB 433.
3. Adds full curriculum showing courses to POS table.
4. Removes the prescription exam requirement administered upon entry to the

program.

5. Adds additional course options to the curriculum.
6. New subheadings/categories are added to POS.
7. The statement on GPA minimum for degree certification is removed.
8. The program overview language is updated.
9. The student options are changed.
10. The program features are changed.
11. A non-thesis MS option is added.

No changes are made to the total hours required nor to the learning outcomes.

Did the program content change 25% or more in relation to the total credit hours, since the 2020-2021 catalog. (<http://catalog.illinois.edu/archivedacademiccatalogs/2020-2021/>)

No

Why are these changes necessary?

1. A required Statistical or Analytical Skills course is added because these skills are beneficial to students in this research-based MS program and transferrable to future careers or professional schools. This course requirement is mirrored in the Entomology, PhD program and other School of Integrative Biology (SIB) departmental graduate programs. The IB 526 Seminar in Entomology is formally added to bring the catalog up to date with the Departmental Handbook.
2. IB 433 Insect Physiology replaces IB 427 Insect Physiology, an update necessitated by changes to the number of credit hours and learning outcomes for the course.
3. In order to fulfill a request from the Provost's Office for greater student accessibility and transparency on our academic catalog pages, all required courses are now listed and accurately total 32 hours.
4. The prescription exam is no longer required, thus the removal of this language corrects listed program requirements.
5. A broader range of courses is added to the required course list to afford students greater flexibility in their course scheduling as some of the required courses are offered infrequently due to instructor schedules. The expanded course offerings include courses that are regularly taken as elective credit by current Entomology, MS students. The courses represent student learning outcomes that are aligned with current degree program learning outcomes and with the original course requirements.

Original core courses:

IB 433 (formerly IB 427) Insect Physiology
IB 444 Insect Ecology
IB 468 Insect Classification and Evol
IB 482 Insect Pest Management
IB 504 Genomic Analysis of Insects

Admissible additional course options:

IB 416 Population Genetics
IB 426 Env and Evol Physl of Animals
IB 432 Genes and Behavior
IB 439 Biogeography
IB 452 Ecosystem Ecology
IB 453 Community Ecology
IB 481 Vector-borne Diseases
IB 501 Programming for Genomics
FSHN 480 Basic Toxicology
CPSC 437 Principles of Agroecology
MCB 435 Evolution of Infectious Disease
CHBE 571 Bioinformatics

6. New subheadings/categories include those for the core curriculum, seminar, and remaining hours requirements. These headings are added to further clarify requirements for students. The "remaining hours" subheading allows students to now

take a broader range of courses in addition to the core curriculum courses.

7. This GPA statement is redundant and thus removed. Now the other requirements table simply states the minimum GPA as 3.0.

8. The statement on graduate teaching is removed from the program overview as teaching is not required of master's students, only PhD students.

9. The core curriculum is changed from requiring 4 of 5 courses to instead only requiring 2 of 5 courses. This allows for greater flexibility in what courses constitute the degree. This is also referenced in item #5 above.

10. The Computational Science & Engineering Concentration is formally added which was previously approved and can be found in the academic catalog (<http://catalog.illinois.edu/graduate/engineering/concentration/computational-science-engineering/>).

11. The addition of a non-thesis MS is for students who begin in a thesis-based MS but are unable to complete a research thesis on an appropriate timeline. For these students, if they have fulfilled other curriculum requirements (i.e., coursework), the Department would prefer to confer a non-thesis MS rather than having the student exit the program without any degree. The Department does plan to continue recruiting MS student only through the thesis-based program and does not plan to recruit any students directly into the non-thesis MS.

Instructional Resources

Will there be any reduction in other course offerings, programs or concentrations by your department as a result of this new program/proposed change?

No

Does this new program/proposed change result in the replacement of another program?

No

Does the program include other courses/subjects outside of the sponsoring department impacted by the creation/revision of this program?

Yes

Courses outside
of the sponsoring
department/
interdisciplinary
departments

[ANSC 446 - Population Genetics](#)

[CPSC 437 - Principles of Agroecology](#)

[CPSC 440 - Applied Statistical Methods I](#)

[MCB 435 - Evolution of Infectious Disease](#)

[NRES 421 - Quantitative Methods in NRES](#)

[NRES 454 - GIS in Natural Resource Mgmt](#)

[NRES 595 - Ecol & Conservation techniques](#)

[FSHN 480 - Basic Toxicology](#)

[CHBE 571 - Bioinformatics](#)

Please attach any letters of support/acknowledgement for any Instructional Resources consider faculty, students, and/or other impacted units as appropriate.

[Department of Entomology Course Request Letter of Support.pdf](#)

[Approval of course substitutions CHBE & STATS.pdf](#)

[Approval of course substitutions NRES.pdf](#)

[Approval of course substitutions CPSC.pdf](#)

[Approval of course substitutions ANSC.pdf](#)

[Approval of course substitutions MCB.pdf](#)

[Approval of course substitutions FSHN.pdf](#)

Program Regulation and Assessment

Plan to Assess and Improve Student Learning

Illinois Administrative Code: 1050.30(b)(1)(D) Provision is made for guidance and counseling of students, evaluations of student performance, continuous monitoring of progress of students toward their degree objectives and appropriate academic record keeping.

List the program's student learning outcomes. Each outcome should identify what students are expected to know and/or be able to do upon completing this program.

1. Synthesize and apply core knowledge related to the field of Entomology, particularly from the areas covered in the core courses and the advanced topic seminars.
2. Design and implement independent research, with the overarching goal to obtain mastery of relevant approaches for their area of research
3. Apply rigorous statistical/analytical methods that typify their area of study
4. Demonstrate effective communication skills
 - a. Presentations
 - b. Publications
5. Obtain teaching experience
6. Learn grant and fellowship application writing
7. Acquire other professional skills
 - a. Data management
 - b. Citation management
 - c. Public Outreach/Science Communication
 - d. Research and Professional Ethics

Describe how, when, and where these learning outcomes will be assessed.

Describe here:

Identify faculty expectations for students' achievement of each of the stated student learning outcomes. What score, rating, or level of expertise will signify that students have met each outcome? Provide rating rubrics as necessary.

Explain the process that will be implemented to ensure that assessment results are used to improve student learning.

Program

Description and

Requirements

Attach Documents

Is the career/profession for graduates of this program regulated by the State of Illinois?

No

Program of Study

Baccalaureate degree requires at least 120 semester credit hours or 180 quarter credit hours and at least 40 semester credit hours (60 quarter credit hours) in upper division courses" (source: <https://www.ibhe.org/assets/files/PublicAdminRules2017.pdf>). For proposals for new bachelor's degrees, if this minimum is not explicitly met by specifically-required 300- and/or 400-level courses, please provide information on how the upper-division hours requirement will be satisfied.

Revised programs [ENT MS Side by Side-7.xlsx](#)

Attach a revised Sample Sequence (for undergraduate program)
or college-level forms.

Catalog Page Text - Overview Tab

Description of program for the catalog page. This is not official content, it is used to help build the new catalog page for the program. Can be edited in the catalog by the college or department.

The Department of Entomology offers graduate programs leading to the Master of Science and Doctor of Philosophy degrees. The program is designed to accommodate incoming students with a wide range of entomological expertise. The goal of the program is to provide students with a strong background in basic biology as it relates to insects and to equip them with the specialized intellectual and technical skills to pursue a career in research, teaching, and service in entomology and related biological disciplines.

Major areas of specialization within the department include systematics, evolutionary biology, molecular genetics, genomics, chemical ecology, disease ecology, invasion biology, toxicology, pollinator health, social insect biology, insect-microbe interactions, conservation biology, and integrated pest management.

Admission

The Graduate Record Examination (GRE) general test scores are not required by our Department but can be submitted if they will support your application. A minimum Test of English as a Foreign Language (TOEFL) score of 550 (paper-based test), 213 (computer-based test), or 79 (internet-based test), or an International English Language Testing System (IELTS) score of 6.5, is required. Previous training in entomology is unnecessary. It is recommended that students who intend to study for advanced degrees in entomology gain a thorough grounding in the physical and biological sciences, mathematics, and the liberal arts. Spring admission is possible for special circumstances.

Financial Aid

Graduate student awards are available, including teaching and research assistantships. In addition, fellowships and traineeships are offered by the Graduate College and the School of Integrative Biology. A single application to the department is sufficient for consideration for all awards currently available.

A candidate for the M.S. degree is expected to become knowledgeable in entomology through coursework and independent research and to complete a research thesis in an area of interest chosen in consultation with an advisor.

For additional details and requirements refer to the department's Graduate Handbook and the Graduate College Handbook.

Statement for
Programs of
Study Catalog

Thesis Option MS

Course List

Code	Title	Hours
Select four of the following:		
IB-427	Course IB-427 Not Found	
IB-444	Insect Ecology	14
IB-468	Insect Classification and Evol	
IB-482	Insect Pest Management	

Code	Title	Hours
IB 504	Genomic Analysis of Insects	
ENT 599	Thesis Research (12 max applied toward degree)	12
Total Hours		0

Course List

Code	Title	Hours
<u>ENT 599</u>	<u>Thesis Research (12 max applied toward degree)</u>	<u>12</u>
	<u>Core curriculum minimum 13 hours</u>	<u>13</u>

Select at least 7 hours from the following courses:

IB 433 Insect Physiology

IB 444 Insect Ecology

IB 468 Insect Classification and Evol

IB 482 Insect Pest Management

IB 504 Genomic Analysis of Insects

One of the following Statistical or Analytical Skills courses:

IB 494 Theoretical Biology + Models

IB 501 Programming for Genomics

IB 517 Analysis of Biological Data in R

CHBE 571 Bioinformatics

CPSC 440 Applied Statistical Methods I

NRES 421 Quantitative Methods in NRES

NRES 454 GIS in Natural Resource Mgmt

NRES 595 Advanced Quantitative Techniques for Ecology and Conservation

Seminar: must register for every term enrolled (3 hours minimum)

IB 526 Seminar in Entomology

Remaining hours to total 32 hours from the following list of courses

The first five courses are most recommended.

IB 433 Insect Physiology

IB 444 Insect Ecology

IB 468 Insect Classification and Evol

IB 482 Insect Pest Management

IB 504 Genomic Analysis of Insects

IB 416 Population Genetics

IB 426 Env and Evol Physl of Animals

IB 432 Genes and Behavior

IB 439 Biogeography

IB 452 Ecosystem Ecology

IB 453 Community Ecology

IB 481 Vector-borne Diseases

IB 501 Programming for Genomics

IB 517 Analysis of Biological Data in R

IB 526 Seminar in Entomology

FSHN 480 Basic Toxicology

CPSC 437 Principles of Agroecology

MCB 435 Evolution of Infectious Disease

CHBE 571 Bioinformatics

Total Hours

32

Other Requirements

Grad Other Degree Requirements

Requirement	Description
<u>Other requirements may overlap</u>	
<u>Masters Thesis Defense Required</u>	<u>Yes</u>
<u>Masters Thesis Deposit Required</u>	<u>Yes</u>
<u>Minimum 500-level Hours Required Overall:12</u>	
<u>Minimum GPA:</u>	<u>3.0</u>

Non-Thesis Option MS

Students need Departmental approval for this degree option.

Course List

Code	Title	Hours
<u>Core curriculum minimum 13 hours</u>		<u>13</u>

Select at least 7 hours from the following courses:

IB 433 Insect Physiology

IB 444 Insect Ecology

IB 468 Insect Classification and Evol

IB 482 Insect Pest Management

IB 504 Genomic Analysis of Insects

One of the following Statistical or Analytical Skills courses:

IB 494 Theoretical Biology + Models

IB 501 Programming for Genomics

IB 517 Analysis of Biological Data in R

CHBE 571Bioinformatics

CPSC 440Applied Statistical Methods I

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IB 439 Biogeography

IB 452 Ecosystem Ecology

IB 453 Community Ecology

IB 481 Vector-borne Diseases

IB 501 Programming for Genomics

IB 517 Analysis of Biological Data in R

IB 526 Seminar in Entomology

IB 590 Individual Topics

FSHN 480Basic Toxicology

Code	Title	Hours
CPSC 437	Principles of Agroecology	
MCB 435	Evolution of Infectious Disease	
CHBE 571	Bioinformatics	
Total Hours		<u>32</u>

Other Requirements

Grad Other Degree Requirements

Requirement	Description
Other requirements may overlap	
Prescription Exam Required (administered upon entrance into program)	Yes
Masters Thesis Defense Required	Yes
Masters Thesis Deposit Required	Yes
Minimum 500-level Hours Required Overall:	12
The grade point average required for degree certification is 3.0 (A = 4.0).	
Minimum GPA:	3.0

Corresponding Degree MS Master of Science

Program Features

Academic Level Graduate

Does this major have transcribed concentrations? Yes ~~No~~

Will you admit to the concentration directly? No

Is a concentration required for graduation? No

What is the typical time to completion of this program? 2 years

What are the minimum Total Credit Hours required for this program? 32

What is the required GPA? 3.0

CIP Code 260702 - Entomology.

Is This a Teacher Certification Program? No

Will specialized accreditation be sought for this program? No

Delivery Method

This program is available:

On Campus - Students are required to be on campus, they may take some online courses.

Admission Requirements

Desired Effective Admissions Term Fall 2024

Is this revision a change to the admission status of the program?

No

Provide a brief narrative description of the admission requirements for this program. Where relevant, include information about licensure requirements, student background checks, GRE and TOEFL scores, and admission requirements for transfer students.

Describe how this revision or phase down/elimination will impact enrollment and degrees awarded. If this is an elimination/phase down proposal include the plans for the students left in the program.

No impact is expected on enrollment or degrees awarded.

Estimated Annual Number of Degrees Awarded

Year One Estimate

5th Year Estimate (or when fully implemented)

What is the matriculation term for this program? Fall

Budget

Are there budgetary implications for this revision? No

Will the program or revision require staffing (faculty, advisors, etc.) beyond what is currently available?

No

Additional Budget Information

Attach File(s)

Financial Resources

How does the unit intend to financially support this proposal?

Will the unit need to seek campus or other external resources?

No

Attach letters of support

What tuition rate do you expect to charge for this program? e.g, Undergraduate Base Tuition, or Engineering Differential, or Social Work Online (no dollar amounts necessary)

[Chem/Life Sciences differential](#)

Are you seeking a change in the tuition rate or differential for this program?

No

Is this program requesting self-supporting status?

No

Faculty Resources

Please address the impact on faculty resources including any changes in numbers of faculty, class size, teaching loads, student-faculty ratios, etc.

No impact is expected on faculty resources. All courses have space available.

Library Resources

Describe your proposal's impact on the University Library's resources, collections, and services. If necessary please consult with the appropriate disciplinary specialist within the University Library.

Library collections, resources and services are sufficient to support this program.

EP Documentation

EP Control Number EP.25.018

Attach Rollback/
Approval Notices

This proposal requires HLC inquiry No

DMI Documentation

Attach Final
Approval Notices

Banner/Codebook Name MS:Entomology -UIUC

Name

Program Code: 10KS0324MS

Minor Code	Conc Code	Degree Code	MS	Major Code
0324				

Senate Approval Date

Senate Conference Approval Date

BOT Approval Date

IBHE Approval Date

HLC Approval Date

DOE Approval Date

Effective Date:

Attached Document Justification for this request

Program Reviewer Comments **Mary Lowry (lowry) (02/29/24 10:02 am):** Rollback: Please see email dated 2-29-24
Mary Lowry (lowry) (03/13/24 10:13 am): Rollback: Please see email dated 3-13-24
Stephen Downie (sdownie) (03/29/24 11:39 am): Rollback: At request of unit.