Agenda Item #08-01
Effective Fall 2009

Eastern Illinois University
Revised Course Proposal
BIO 4964, Entomology

Please check one: ☐ New course ☒ Revised course

PART I: CATALOG DESCRIPTION

1. **Course prefix and number, such as ART 1000:** BIO 4964
2. **Title (may not exceed 30 characters, including spaces):** Entomology
3. **Long title, if any (may not exceed 100 characters, including spaces):**
4. **Class hours per week, lab hours per week, and credit [e.g., (3-0-3)]:** 3-3-4
5. **Term(s) to be offered:** ☒ Fall ☐ Spring ☐ Summer ☐ On demand
6. **Initial term of offering:** ☒ Fall ☐ Spring ☐ Summer **Year:** 2009
7. **Course description (not to exceed four lines):** A study of insects, and closely related arthropods, with regard to identification, ecology, morphology, physiology, and evolution. Methods of collection and specimen preparation are included. WI
8. **Registration restrictions:**
   a. **Identify any equivalent courses** (e.g., cross-listed course, non-honors version of an honors course). None
   b. **Prerequisite(s):** BIO 1300G or permission of instructor
   c. **Who can waive the prerequisite(s)?**
      ☐ No one ☐ Chair ☒ Instructor ☐ Advisor ☐ Other (Please specify)
   d. **Co-requisites** (course(s) which MUST be taken concurrently with this one): None
   e. **Repeat status:** ☒ Course may not be repeated.
      ☐ Course may be repeated to a maximum of hours or times.
   f. **Degree, college, major(s), level, or class** to which registration in the course is restricted, if any
   g. **Degree, college, major(s), level, or class** to be excluded from the course, if any:
9. **Special course attributes** [cultural diversity, general education (indicate component), honors, remedial, writing centered or writing intensive] Writing Intensive
10. **Grading methods** (check all that apply): ☒ Standard letter ☐ C/NC ☐ Audit ☐ ABC/NC ("Standard letter"—i.e., ABCDF--is assumed to be the default grading method unless the course description indicates otherwise.)
11. **Instructional delivery method:** ☐ lecture ☐ lab ☒ lecture/lab combined ☐ independent study/research ☐ internship ☐ performance ☐ practicum or clinical ☐ study abroad ☐ other

PART II: ASSURANCE OF STUDENT LEARNING

1. Student learning objectives:

a. Students will:

- identify insects classified in the major orders of the Class Insecta. (Goals addressed: depth of content knowledge)
- prepare a representative collection of insect orders using appropriate collection and curation techniques. (Goals addressed: depth of content knowledge)
- explain the evolutionary relationships between major insect orders and suborders. (Goals addressed: depth of content knowledge; effective oral and written communication, and effective critical thinking and problem solving)
- explain the functional, behavioral, ecological, and morphological diversity of the major insect orders. (Goals addressed: depth of content knowledge; effective oral and written communication, and effective critical thinking and problem solving)
- search literature, identify peer-reviewed primary sources, critique and summarize sources for course assignments. (e.g. critical literature summaries, and term laboratory report)
- design an original research hypothesis and conduct an experiment using insect subjects, as a laboratory term project. (Goals addressed: effective critical thinking and problem solving, advanced scholarship through research or creative activity)
- prepare a scientific-style paper (as would be submitted to a scientific journal) from the results of the laboratory term project. (Goals addressed: effective oral and written communication, and effective critical thinking and problem solving)
- prepare and present a ten-minute talk (as would be presented at a scientific conference) from the results of the laboratory term project. (Goals addressed: effective oral and written communication, and effective critical thinking and problem solving)

2. Identify the assignments/activities the instructor will use to determine how well students attained the learning objectives:

	Midterm & Final Exams 30%	Critical Literature Summaries (3) 15 %	Laboratory Assignments 20%	Insect Collection 15%	Laboratory Term Project Report 10%	Laboratory Term Project Oral Presentation 10%
identify insects in the major orders of Class Insecta	X		X	X	X	X
prepare insect collection using appropriate collection & curation techniques			X	X		
explain the evolutionary relationships between major insect orders and suborders.	X	X	X		X	X
explain the functional, behavioral, ecological, and morphological diversity of the major insect orders.	X	X	X		X	X
search literature, identify peer-reviewed primary sources, critique and summarize sources		X				
design an original research hypothesis and conduct an experiment using insect subjects, as a laboratory term project					X	X
prepare a scientific-style paper from the results of the laboratory term project					X	
prepare and present a ten-minute talk from the results of the laboratory term project						X

3. Explain how the instructor will determine students' grades for the course:

Course grade will be based on:
Midterm & Final Exams 30%, Critical Literature Summaries (3) 15 %, Laboratory Assignments 20%, Insect Collection 15%, Laboratory Term Project Report 10%, Laboratory Term Project Oral Presentation 10%.

4. For technology-delivered and other nontraditional-delivered courses/sections, address the following: N/A

5. For courses numbered 4750-4999, specify additional or more stringent requirements for students enrolling for graduate credit. This course is appropriately numbered as BIO 4964 as objectives for graduate study are met including depth of content knowledge, effective critical thinking and problem solving, effective oral and written communication, and advanced scholarship through research or creative activity. Students completing this course for graduate credit will be held to higher expectations and more stringent grading criteria in all course work, including a more complex laboratory term project design, a term report which has a more extensive literature review, as well as an expectation of a professional-level in-class presentation (as one would expect when presenting at a scientific society.)

6. If applicable, indicate whether this course is writing-active, writing-intensive, or writing-centered: This course is writing-intensive. Both lecture and laboratory components of this course have writing assignments and activities throughout the semester, and both exams are largely a short-answer essay format. The first journal critique will be revised by students after receiving comments by the instructor. In this course, writing assignments, activities, and test answers are at least 35% of the final course grade.

PART III: OUTLINE OF THE COURSE

Units of time: Three fifty-minute lectures and 1 three-hour laboratory for 15 weeks

Week	Subject: Lecture and Laboratory
1	Introduction to Entomology
	Lab: Field trip Fox Ridge/Collection techniques
2	Insect Classification
	Lab: Field trip Coles County sites/Intro to Laboratory term Project Design
3	General characteristics of insect; Critical Literature Summary I
	Lab: Field trip Douglas-Hart/Intro to Laboratory term Project Design
4	Insect external anatomy
	Lab: Curation techniques/Insect Anatomy I
5	Insect integument; development of cuticle
	Lab: Curation techniques/Insect Anatomy II
6	Reproduction and development/Midterm I
	Lab: Specimen Study of the Parainsecta, Entognatha, and Apterygota
7	Maintenance & Movement; Critical Literature Summary II
	Lab: Specimen Study of the orders Ephemeroptera, Odonata, Blattodea, Mantodea, and Ispotera
8	Behavioral Integration & sensory systems
	Lab: Dermaptera, Plecoptera, Embiidina, Orthoptera, Phasmatodea, Zoraptera, Psocptera, and Phthiraptera
9	Social Relationships
	Lab: Specimen Study of the orders Hemiptera, Neuroptera, and Coleoptera
10	Insect-Plant interactions; intro to Integrated Pest Management; Critical Literature Summary II
	Lab: Specimen Study of the order: Diptera
11	Insects and vertebrates; intro to medical entomology & forensic entomology
	Lab: Specimen Study of the orders: Lepidoptera and Trichoptera
12	Insect Evolution
	Lab: Specimen Study of the order: Hymenoptera
13	Student Presentations
	Lab: Student Presentations; Collection curation
14	Student Presentations
	Lab: Student Presentations; Collection curation
15	Student Presentations
	Lab: Collection Curation
16	Final Exam

PART IV: PURPOSE AND NEED

1. **Explain the department's rationale for developing and proposing the course.**
   This course is already offered as BIO 3720 - Entomology and concerns the study of the most diverse animal taxon on earth. Insects comprise 75% of all animals and are found in nearly every terrestrial habitat studied, and understanding this group is important for biologists. This course has historically been offered at the 3,000 level but course expectations and requirements are commensurate with other 4,000 level courses such as BIO 4954 -Ornithology, BIO 4952 -Herpetology, BIO 4950 -Ichthyology, and BIO 4956-Mammalogy, thus a revision is warranted.
   a. This course is not a general education course.
   b. This course is not technology delivered.

2. **Justify the level of the course and any course prerequisites, co-requisites, or registration restrictions.**
   This course will take the place of BIO 3720 - Entomology. The in-depth focus on specific taxa, as well as the expectations and course requirements for Entomology are commensurate with departmental offerings at the 4750-4999 level. Additionally, more general courses are already available for our majors at the 3,000 level, including BIO 3952 -Invertebrate Natural History, and BIO 3710 -Animal-Plant Interactions.

3. **If the course is similar to an existing course or courses, justify its development and offering.**
   This course shares some content with existing Biological Sciences courses such as BIO 3952-Invertebrate Natural History, BIO 3710-Animal-Plant Interactions, as well as BIO 3800-Ecology. These courses may use insects as examples relative to course content but do not focus on insects as a taxonomic group.
   a. This course does not substantially duplicate the contents of an existing course.
   b. The proposed course will take the place of BIO 3720-Entomology.

4. **Impact on Program(s):**

   a. This course will be an approved elective for undergraduate students in the Biological Sciences.
   b. This course will be an approved elective for graduate students in the Biological Sciences.

PART V: IMPLEMENTATION

1. **Faculty member(s) to whom the course may be assigned:** The course will be taught be Dr. Ann H. Fritz, or any qualified Biological Sciences faculty member.
2. **Additional costs to students:** $ 40.00 laboratory and field-trip fee (fee was previously approved by the President's Council for BIO 3720 and will be applied to BIO 4964 by substitution.)
3. **Text and supplementary materials to be used (Include publication dates):**
   Triplehorn C.A, & N.F Johnson. 2005. Borror and Delong's Introduction to the Study of Insects, 7th Edition. Belmont, CA: Thompson Brooks/Cole.
   Castner J.L. 2000. Photographic Atlas of Entomology and Guide to Insect Identification. Gainesville, FL: Feline Press

PART VI: COMMUNITY COLLEGE TRANSFER
A community college course will not be judged equivalent to this course.

PART VII: APPROVALS
Date approved by the Biological Sciences Curriculum Committee: 10-14-07
Date approved by the College of Sciences Curriculum Committee: 11-30-07
Date approved by CAA: 1-24-08