Dr. Young

ENTOMOLOGY 432 – TAXONOMY AND BIONOMICS OF IMMATURE INSECTS

[Semester II: M, F (1:20 - 5:25); 4 credits]

COURSE OUTLINE

I. DESCRIPTION OF COURSE

Instructional format includes lectures, laboratory periods and field trips.

Lectures focus on the anatomy/morphology, taxonomy and bionomics of immature insects at the ordinal and familial levels. Emphasis is placed on those taxa which exhibit true metamorphosis and those which are not covered by other courses (such as Aquatic Insects). To this end, the following groups will not be treated in lecture (although they will be briefly examined in lab): Ametabola (Protura, Diplura, Collembola, Microcoryphia, Thysanura); Odonata, Ephemeroptera, Plecoptera, Trichoptera.

Laboratory periods will emphasize utilizing taxonomic keys to identify immature insects to order and family. Early in the semester, most of this period will be spent with specimens from the reference collection. Later in the semester, most of the time will be spent identifying specimens collected by the student while on field collecting trips.

Six to eight field trips are scheduled during class time; an additional 1-2 optional trips will be planned for weekends.

A collection of immature insects is required. Exams will involve the student with the use of appropriate literature and taxonomic keys to identify unknown immature insects and speculate on salient aspects of their bionomics.

Prerequisite: Entomology 302 or equivalent, or instructor approval. Enrollment will be limited to 20 students.

A. General Course Objectives

1. The student will:

   a. be provided with anatomical and taxonomic descriptions of a diverse array of immature insects;

   b. gain practical experience in utilizing taxonomic keys to identify immature insects (particularly the diverse and economically significant Holometabola);

   c. be provided with demonstrations of proper methods of preparation, preservation and study of the various immature insects;

   d. be provided with field exposure to various habitats and collecting techniques;

   e. gain familiarity with rearing techniques as well as the significance of rearing;

f. become more cognizant of the relationship of structure to that of function and be able to relate this concept to the bionomics of immature insects;

g. use appropriate methods for killing, preserving and labeling immature insects in order to build a scientifically useful collection.

B. Procedures

1. General:

Instruction is provided in two, four—hour periods per week, the first hour of which is generally used as a lecture period. Roughly 20% of the instruction will take place in the field, on required collecting trips.

2. Specific:

a. Lecture: Anatomical and taxonomic background material will be presented to enable the student to use taxonomic keys; presentations will also cover bionomics and any unique features of taxa under consideration.

b. Laboratory: Students will work, under direction of the instructor, on acquainting themselves with taxonomic keys and on the identification and study of specimens to be used in their collections. Optional open lab hours will be available to students desiring additional time.

c. Field Work: A variety of habitats will be visited to provide students broad exposure to immature insects, their habits and associated sampling techniques.

II. TOPICAL OUTLINE (A suggested outline of the 30 instructional periods)

[please refer to the current Ent 432 semester schedule]

III. SUGGESTED TEXTUAL MATERIALS

A. Required Texts [not at bookstore: **WAIT TO LEARN MORE ABOUT OPTIONS**]

Immature Insects. Volume I. F. W. Stehr (editor) 2007 (soft cover)

Immature Insects. Volume II. F. W. Stehr (editor) 1991

IV. EVALUATION

Exam 1a/1b = 20% (about 4 unknowns each = 8)

Exam 2a/b = 20% (about 4 unknowns each = 8)

Collection = 60% [refer to collection handout for details]

V. SUPPLEMENTARY READINGS

Suggested and/or required readings will be available in the laboratory, on the internet, or made available by the professor.

VI. COURSE CATALOG CAPSULE DESCRIPTION

ENTOM 432 Taxonomy and Bionomics of Immature Insects [Semester II; 4 cr.] Lectures on anatomy/morphology, taxonomy, bionomics of immature insects (ordinal and familial levels). Ametabolous orders, Odonata, Ephemeroptera, Plecoptera, and Trichoptera will not covered in lecture (will be examined in lab). Labs emphasize utilizing taxonomic keys for identification (order & family). Required field trips and collection. P: ENTOM 302 or equiv., or instr. cons. Enrollment limit 20.