

## NEW COURSE OFFERING FOR FALL 2009

### ENT 497F Insect Biodiversity Science

(INSECT BIO SCI), 4 credits

Lectures: Monday 09:05-09:55AM

Lab Sessions: Tuesday and Thursday 01:25-04:25PM

Schedule # for Registration: 352756

The course *Insect Biodiversity Science: Synthesis*, a new to biodiversity science, is offered for the Fall Semester 2009. This course takes a new integrated approach to the study of insect biodiversity by the synthesis of relevant contemporary scientific disciplines related to biodiversity, namely taxonomy, community ecology, and resources management. This course challenges students in the upper baccalaureate and graduate programs in the study of insect biodiversity through the three parallel tracks and expects students to acquire: a) the essence of biodiversity along with introduction to insect biodiversity; b) principles and practice of applied taxonomy based on the essence of biodiversity and practical taxonomic capacity for taxa identification of insects and related arachnids; and c) the process and techniques of field inventory and assessment of insect biodiversity through team research which can be applied to sustainable management and conservation of natural resources that include biodiversity. This course delivers these subject areas in a series of lectures and laboratory exercises with advanced reading of key papers and hands-on experience in insect biodiversity science.

#### **Background:**

Biodiversity is the essence of life on our planet Earth and basic natural resources for our life-support system, referring to the totality of living species of plants, animals, fungi, and microorganisms. As taxonomy has been instrumental to exploration, documentation and synthesis of global biodiversity, biodiversity science as a newly emerging scientific study of biodiversity integrates diverse scientific and scholarly perspectives and knowledge of contemporary disciplines related to biodiversity at large. Since the Linnean period over 250 years ago natural historians and taxonomists subsequently have documented biodiversity from backyards and many parts of the world which resulted in approximately 1.76 million species of global biodiversity and yet which represents barely 18% of what presently extant on our planet.

Insects and related arachnids are most diverse and abundant group of organisms making up the largest group of global biodiversity. They are major components of diverse ecosystems and important elements in the production of ecosystem services and are important ecological partners in sustaining our life-support system. Management and conservation of natural resources, particularly biodiversity, crop, fish, forest, wildlife, forest, wetland, and watershed, has to be site-specific based on the biodiversity assessment. Backyard biodiversity, the totality of all living organisms at a specific spatial unit, is unique and deterministic due to geographic location and physical configuration of the site including soil quality, elevation, and weather.

This course is therefore designed to provide a hands-on experience of biodiversity assessment based on the essence of biodiversity and biology and evolution of species.

#### **Requirements:**

No entomological background is required for this course. As the course is tightly organized and involves broad areas of several biological disciplines, the course contents are rich in information and rigorous in perspectives requiring a full attention of individual students in the class. Students are expected to read assigned reading materials in advance and prepare for discussion on the subject areas. IF YOU ARE INTERESTED IN THE FULL SYLLABUS, PLEASE VISIT <http://www.ento.psu.edu/Teaching/ENT497F2009.pdf>