

Special topics in:
ADVANCED MOSQUITO BIOLOGY
ENY 6905 (s. 02HE, 02HF, 02HG), 3 credits

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- Venue and time: This course will be managed by e-Learning in Sakai (a broadband internet connection is strongly suggested), for suggested module section review dates see course schedule. The course consists of modules encompassing broad fields of knowledge, each of which contains a number of sub-sections that detail these fields. Modules are provided by UF-FMEL experts in these fields; email addresses are provided. To facilitate lecturer-learner interaction, students may contact the lecturer by email. If a more in depth discussion is required, students should arrange this with the specific lecturer. Requests to take this course offline by CD/DVD should be sent to the course directors. Questions pertaining to the course organization or overall structure should be sent to one of the course directors. All course communication will be via the course web site and course email. Students are responsible for notices or course updates posted using these methods and should notify the course directors if difficulty in electronic communication occurs or is expected.
- Course objectives: Upon the successful completion of this course students shall be able to:
- 1) Understand the fundamental biological processes governing the various life stages of the mosquito.
 - 2) Identify human practices that promote the proliferation of anthropophilic mosquito species
 - 3) Analyze the suitability of an environment to support immature and adult mosquitoes in terms of its ecological factors, and to furthermore evaluate the suitability of the environment for mosquito-borne disease transmission.
 - 4) Review and understand literature pertinent to mosquito biology research including physiology, modeling, genetics, ecology, and disease transmission.
- Course modules: Six critical areas of mosquito biology will be offered to students:
- 1) Classification – an exploration of the origin and amazing diversity of mosquito species

- 2) Natural History and Ecology – the complex interactions of the mosquito with its environment
- 3) Physiology – the details of the inner workings of the mosquito through its life stages
- 4) Population Dynamics – predicting and understanding the dynamics of mosquito populations
- 5) Mosquito-borne disease – entomological mechanisms of pathogen propagation and transmission
- 6) Control of Mosquitoes– a comprehensive review of the approaches used to mitigate mosquito impacts on human health and development

Prerequisites: There are no prior coursework requirements to enroll; however this is an advanced course and basic knowledge of ecology, cell biology, genetics, and molecular biology is highly recommended. Graduate students are encouraged to contact the course director with questions, and undergraduate students are required to obtain the permission of the course director prior to enrolling in the course.

Course materials: Lectures and required reading materials will be posted on the e-Learning in Sakai site, along with suggestions for further reading.

Evaluation: Grading will be based on student performance on two short answer/essay written examinations (35% each), mandatory participation in all discussion group meetings (10%) and a review project on a topic relevant to mosquito biology (20%). The mosquito review project may be delivered in alternative mediums such as a research paper (10 page maximum), power point presentation, and video or computer animation. Projects in media other than a paper should contain as much content as a 10 page review paper. Further specifics will be provided after approval of topics and formats. The mosquito review project topic and medium choice is due September 20, 2011 for approval by the course directors. Review projects are due by 5 pm on November 22, 2011. The midterm and final exams will be made available to students on the e-Learning in Sakai site at 10am EST on the specified day, and is due 48 hours later (10 am EST 2 days later). Exams are open book/notes, but are expected to be individual efforts. The final exam is NOT cumulative. Students will be graded on the completeness of their answers, as well as their insights.