GENE4550/6550: Evolution and Development

Instructors: Mike White, C212 Davison Life Sciences, 706-542-2464, whitem@uga.edu
Doug Menke, 250A Coverdell Center, 706-542-9557, dmenke@uga.edu

Office hours are by appointment.

MEETING TIME AND LOCATION
Tuesday/Thursday, 9:30am – 10:45am, Aderhold 626

PREREQUISITES
GENE 3000-3000D, GENE 3000H, GENE 3200-3200D, GENE 3200H, or CBIO 3600.

COURSE DESCRIPTION
This course will examine the developmental and genetic mechanisms that contribute to the evolution of trait differences between species. In addition, we will explore how different organisms can alter their development (and their phenotypes) in response to environmental cues.

REQUIRED TEXT
Ecological Developmental Biology, Scott Gilbert and David Epel, 2nd edition.

CLASS FORMAT
The class format consists of lectures as well as active in class discussions of assigned readings. The lectures will introduce core concepts in evolution and development. The discussions will center on research articles that investigate evolution and development in diverse species. Students are expected to attend all classes and come prepared to participate in class discussions.

EXAMS
During the semester there will be three in class exams and a final (see schedule).

ARTICLE SUMMARIES & DISCUSSION QUESTIONS
In addition to readings from the textbook, students will also be provided with primary scientific research articles that will be discussed during class. For each article, students must read the paper and write a short, ***3-4 sentence summary*** that describes the main question or problem being investigated and the major conclusion of the article. In addition, students must include three discussion questions about the research article. The article summary and discussion questions must be submitted by 8am the morning of the class discussion.

STUDENT PRESENTATIONS
In early October, students will be assigned to a presentation group. Each group will select a research topic (e.g., evolution of the turtle shell) to present at the end of the semester. The presentation will cover the evolutionary history of the trait and what is known about the developmental mechanisms that contribute to the trait. Additional instruction will be provided at the time that group assignments are made.

COURSE GRADING
GENE4550: Your final grade will be based on the three in class exams, the final exam, article summaries and discussion questions, and the student presentation.* Final grades will be based on a standard grade distribution: A: 90-100, B: 80-89, C: 70-79 and D: 60-69, with appropriate cut-offs for +/–. Exam scores may be curved as needed.
Students taking GENE6550 will also be assigned a research report that is due on December 6th.

GENE4550 COURSE GRADING – PERCENTAGE BREAKDOWN

Exam 1	20%
Exam 2	20%
Exam 3	20%
Final Exam	20%
Discussion Questions & Paper Summaries	10%
Student Presentation	10%

GENE6550 COURSE GRADING – PERCENTAGE BREAKDOWN

Exam 1	18%
Exam 2	18%
Exam 3	18%
Final Exam	18%
Discussion Questions & Paper Summaries	8%
Student Presentation	10%
Research Report	10%

All academic work must meet the standards contained in "A Culture of Honesty." Each student is responsible to inform themselves about those standards before performing any academic work.