

BOT4935/BOT6935 – Readings in Molecular Ecology – Fall 2017

Credits: 1

Course meetings

Tuesdays, period 7 (1:55-2:45), 222 Carr Hall

Instructor

Dr. Norman Douglas, nadouglas@ufl.edu, 618A Carr Hall

Course description

Ecological and evolutionary forces work together to shape the patterns of genetic variation within and among populations. The aim of this course is to explore the ways in which standing genetic variation of wild populations can be used to provide compelling insight into important questions about these ecological and evolutionary forces. Examples include, but are not limited to, studies of phylogeography, landscape genetics, local adaptation, migration, historical demography, bottlenecks, speciation, hybridization, and animal behavior.

This course is targeted toward *both* graduate students (especially those early in their graduate careers) who are interested in exploring a variety of approaches to answer the questions they will approach in their graduate research, and to undergraduates who intend to apply to graduate school in one of the “outdoor biology” disciplines (wildlife ecology, marine science, botany, conservation biology, etc.) Prior coursework in genetics and evolution is strongly preferred, though there are no specific prerequisites.

The course will consist of weekly 1-period meetings. The majority of the meetings will consist of student-led discussions of papers (1/week) selected in consultation with the instructor. Grades will be based on participation (reading of the paper before class, and active participation in the discussion), and leading discussion.

Learning objectives

After completion of this course, undergraduate students will be able to:

- Analyze primary literature to identify key questions of ecological and evolutionary significance.
- Discuss how hypotheses are constructed around natural experiments in the biological sciences.
- Converse about relevant parameters that describe genetic diversity and relatedness and relate these to hypothesis testing.
- Compare the relative merits of different approaches to obtaining and analyzing genetic data from natural populations.

In addition to the above, graduate students will be able to:

- Dig deeply into the background of cutting-edge molecular and statistical methods in order to understand their methodological underpinnings.
- Show leadership in explaining difficult and/or unfamiliar scientific concepts to less experienced scientists.

Grading

Leading discussion (selection of paper, preparation of discussion points according to guidelines, facilitation of discussion) 50

Participation (attendance, preparedness as evidenced by submission of a discussion question, and contribution to the group) 50

Total 100

• Point Range (%)	• Letter Grade
• ≥ 90.00	• A
• ≥ 86.66	• A-
• ≥ 83.33	• B+
• ≥ 80.00	• B
• ≥ 76.66	• B-
• ≥ 73.33	• C+
• ≥ 70	• C
• ≥ 66.66	• C-
• ≥ 63.33	• D+
• ≥ 60	• D
• ≥ 56.66	• D-
• < 56.66	• E

Course attendance

Attendance is essential for success in this course. We understand that absences happen, but if you make this a habit, you will perform poorly in this class. All meetings are considered to be required. If you know in advance that you are unable to attend, please contact Dr. Douglas to arrange for submission of written discussion questions before class.

UF counseling services

Resources are available on campus for students having personal problems or lacking clear career and academic goals. The resources include:

- UF Counseling & Wellness Center, 3190 Radio Rd, 392-1575, psychological and psychiatric services.
- Career Resource Center, Reitz Union, 392-1601, career and job search services.
- Many students experience test anxiety and other stress – related problems. “A Self Help Guide for Students” is available through the Counseling Center (301 Peabody Hall; 392-1575) and at their web site: <http://www.counsel.ufl.edu/>.

U Matter, We Care

Your well-being is important to the University of Florida. The U Matter, We Care initiative is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contact umatter@ufl.edu so that the U Matter, We Care Team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at 352-392-1575. The U Matter, We Care Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.

Academic Honesty Policy

All students registered at the University of Florida have agreed to comply with the following statement:

“I understand that the University of Florida expects its students to be honest in all their academic work. I agree to adhere to this commitment to academic honesty and understand that my failure to comply with this commitment may result in disciplinary action up to and including expulsion from the University.”

In addition, on all work submitted for credit the following pledge is either required or implied:

“On my honor I have neither given nor received unauthorized aid in doing this assignment.”

If you witness any instances of academic dishonesty in this class, please notify the instructor or contact the Student Honor Court (392-1631) or Cheating Hotline (392-6999). For additional information on Academic Honesty, please refer to the University of Florida Academic Honesty Guidelines at: <https://catalog.ufl.edu/ugrad/current/advising/info/student-honor-code.aspx#honesty>.

Remember, plagiarism is also a violation of the Academic Honesty Policy. Please see above for a source on how to avoid plagiarism.

Accommodations for students with disabilities

Students who will require a classroom accommodation for a disability must contact the Dean of Students Office of Disability Resources, in Peabody 202 (phone: 352-392-1261). Please see the University of Florida Disability Resources website for more information at: <http://www.dso.ufl.edu/drc/>. Note that the student should provide documentation of a requirement for accommodation **as soon as possible**. No accommodations are available to students who lack this documentation. It is the policy of the University of Florida that the student, not the instructor, is responsible for arranging accommodations when needed. Once notification is complete, the Dean of Students Office of Disability Resources will work with the instructor to accommodate the student.

Day	Date	Topic	Reading assignment
T	22-Aug	Introduction & Organization	None
T	29-Aug	Overview & scope of molecular methods applied to natural populations.	TBA
T	5-Sep	Instructor-led discussion of paper	TBA
T	12-Sep	Student-led discussion of paper	TBA
T	19-Sep	Student-led discussion of paper	TBA
T	26-Sep	Student-led discussion of paper	TBA
T	3-Oct	Student-led discussion of paper	TBA
T	10-Oct	Student-led discussion of paper	TBA
T	17-Oct	Student-led discussion of paper	TBA
T	24-Oct	Student-led discussion of paper	TBA
T	31-Oct	Student-led discussion of paper	TBA
T	7-Nov	Student-led discussion of paper	TBA
T	14-Nov	Student-led discussion of paper	TBA
T	21-Nov	Student-led discussion of paper	TBA
T	28-Nov	Student-led discussion of paper	TBA
T	5-Dec	Summary & final meeting	TBA