



## BIO 4441F SPECIAL TOPICS IN EVOLUTION

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**Welcome to Biology 4441F! Together we will explore evolution in the context of speciation and biodiversity. Please, read and keep this course outline handy, because it is an official document that contains important course information.**

### COURSE DESCRIPTION

A critical examination of topics in evolutionary biology such as levels of selection, speciation, patterns of diversification, origin and radiation of selected groups, biogeography, and taxonomy and phylogeny. Since there will be no textbook for the class, published reviews and original research articles will serve as course material, which will be posted to OWL for downloading and reading. Please consult on a regular basis, as assessments may include this content.

### COURSE COMMUNICATION

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**Room:** BGS 1056

**Lectures:** Mon., Wed. → 12:30-1:30PM

**Instructor:** Dr. Rachelle Kanippayoor

**Office Hours:** Appointment only (Not applicable. Location will be determined between student(s) and Dr. Kanippayoor)

**E-mail:** rkanipp@uwo.ca

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### Laboratory:

Friday 2:30-3:30pm  
B&GS 1056

### Teaching Assistants:

Joshua Isaacson

### Emails:

jisaacso@uwo.ca

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**2 lecture hours, 3 Laboratory/discussion hours, 0.5 course.**

**Prerequisites:** Either completion of at least 1.5 Biology courses from the 3000-level or above, or registration in Year 4 of the Honours Specialization in Animal Behaviour

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### EMAIL POLICIES

**Email hours:** Emails are checked from 9:30 am to 4:30 pm, **weekdays only**. Answered within 2 business days, with the limitations below:

Your instructor's email should only be used for administrative purposes. In order to maximize efficiency and to allow your instructors to respond to legitimate concerns as quickly as possible, emails of the following nature will *not* be responded to:

- Questions about course material or on how to prepare for written assessments, or annotations. Such questions should be taken to the tutorial or posted on the OWL forum.
- Questions that can be answered based on the information found in this course outline. Being able to find information yourself is an important soft-skill and an employability outcome.
- Requests for grade increases, extra assignments, make-up exams, etc. (see pages 3-4).

- If you email your instructor, you must use your **Western email address** and **include Bio4441** in the subject line. Messages from a non-Western account or those that do not include Bio3467 may be blocked by the university's anti-spam system. Please do not hesitate to contact your instructor if you have any constructive comments or feedback on any aspect of Bio3467. Myself, and your TA, are always trying to improve the course!

## **COURSE MATERIALS/WEBSITE**

There is no required textbook for the course. However, students may want to read and reference the following for assessments and additional information:

*Speciation*, Jerry Coyne and Allen Orr (2004), Sinauer Associates

Most lectures will be supplemented by readings from the primary literature. PDFs of these will be posted on OWL and updated weekly.

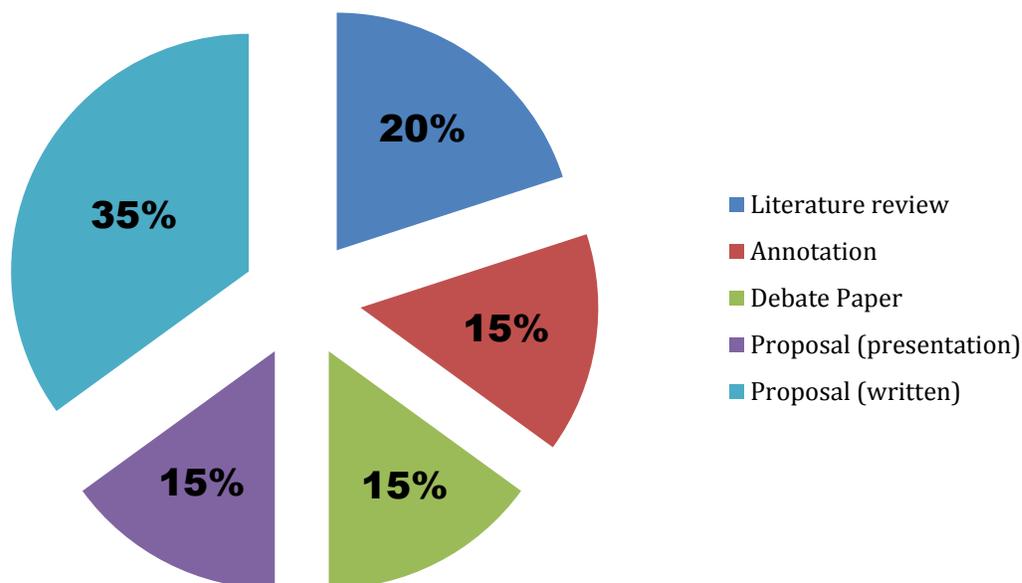
Students should check OWL (<http://owl.uwo.ca>) on a regular basis for news and updates. This is the primary method by which information will be disseminated to all students in the class. Students are responsible for checking OWL on a regular basis.

## **TEACHING METHODS:**

- 1. Reading prior to attending class, from posted/suggested readings, as indicated on schedule.**
- 2. Class lectures, discussions, and debate papers.**
  - a. Debate Papers (15%):** Students will be expected to submit a written paper debating various topics based on the concepts covered in lecture.
- 3. Laboratory/Discussion** - The goal of the laboratory/discussion will be to understand recent progress in research, through the discussion of primary literature results and methods.
  - a. Annotation Presentations (15%):** Students will be expected to deliver a lecture and group discussion (see schedule for when you must present) on the methods and results of an assigned primary research article. You must include background information that establishes the scientific rationale for the given study. More information can be found in the "Annotating Research Articles Assignment" document on OWL.
- 4. Literature Review (25%):** Students will present an overview of our current understanding for a select topic on evolution has been covered in class. The topic of the literature review will serve as a companion assignment for the research proposal (see below).
- 5. Proposal for a Research Project** - Students will propose a research project that focuses on a topic covered in class. Here, students will outline our current understanding for select topics in evolution and will design experiments to further our understanding. The goal of this assessment to prepare students for research outside of an undergraduate laboratory and to explore potential graduate positions.
  - a. Proposal, Presentation (15%):** Students will present their proposed experiment to the class, outlining our current understand of their research topic and what we need to understand further. Students will also present their designed experiments to the class. Please review the document, "Proposal for a Research Project" on OWL for more information.
  - b. Proposal, Written (35%):** Student will submit a written proposal on their research topic, outlining in detail our current understanding, questions we have yet to answer, and how can we answer these questions using the scientific method. Please review the document, "Proposal for a Research Project" on OWL for more information.

## EVALUATION

### Components:



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## IMPORTANT LEGALITIES

### **Marks will be posted regularly to the class OWL website.**

Your TA will be responsible for marking most of the assignments. All appeals, however, must be submitted in writing to the instructor **within two weeks** of the mark posting with a clear explanation of the reason for the appeal. The instructor may re-grade all or part of the assignment to ensure all aspects of the assignment have been met and to look for additional errors. This may lower or raise the final mark of the assessment. The instructor and the TA will consult the new mark if needed.

### **Missed Course Components**

If you are unable to meet a course requirement due to illness or other serious circumstances, you must provide valid medical or supporting documentation to the Academic Counseling Office of your home faculty as soon as possible.

If you are a Science student, the Academic Counseling Office of the Faculty of Science is located in WSC 140, and can be contacted at 519-661-3040 or scibmsac@uwo.ca. Their website is [http://www.uwo.ca/sci/undergrad/academic\\_counselling/index.html](http://www.uwo.ca/sci/undergrad/academic_counselling/index.html).

A student requiring academic accommodation due to illness must use the Student Medical Certificate ([https://studentservices.uwo.ca/secure/medical\\_document.pdf](https://studentservices.uwo.ca/secure/medical_document.pdf)) when visiting an off-campus medical facility.

For further information, please consult the university's medical illness policy at [http://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/accommodation\\_medical.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_medical.pdf).

### **Policies on submitting assignments:**

- **Literature review, Debate paper, and Proposal (written):** Note that these assignments can also be submitted by email or via hard copy. Both assignments are due **before the end of lecture on the day it's due**. If you decide to provide a late assignment, you also decide to accept a reduced grading (80% of the grade if received within 24 hours after the submission date/time). A grade of 0 if received beyond 24 hours after submission date/time, no exceptions.

## LEARNING OUTCOMES

- As a result of attending lectures, students should be able to recognize and apply principles of evolutionary theory to real-world or hypothetical examples, via written answers in their debate papers.
- As a result of participating in laboratory activities, students should be able to apply principles of classification to construct an evolutionary tree for a hypothetical group of organisms.
- As a result of participating in discussion groups, students should be able to:
  - read primary literature in the field of evolutionary biology at sufficient depth to present or contribute to discussion of the approach, major findings, implications, strengths and weaknesses of papers
  - contribute to discussion on applications of evolutionary theory, and on barriers to widespread public acceptance of evolution
- As a result of completing the final assessment, students should be able to:
  - identify a topic of current interest in evolutionary biology, in consultation with the course instructor
  - locate and critically read 10-30 research papers concerning this topic, most of which are primary research papers published within the last 10 years
  - critically synthesize these papers to produce a written review paper that establishes why the topic is important and timely, and generates a clear argument rooted in evidence.

## ACADEMIC OFFENCES

### Plagiarism:

- Students must write their annotation and other written assignments in their own words, and not copy paste the article. Scholastic offences are taken seriously and students are directed to read the policy at: [http://www.uwo.ca/univsec/handbook/appeals/scholastic\\_discipline\\_undergrad.pdf](http://www.uwo.ca/univsec/handbook/appeals/scholastic_discipline_undergrad.pdf)  
Also take a look at “The Fine Print: University Rules And Regulations”  
<http://www.uwo.ca/biology/undergraduate/counsellingrules.htm>
- All required papers may be subject to submission for textual similarity review to the commercial plagiarism detection software under license to the University for the detection of plagiarism. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between The University of Western Ontario and Turnitin.com (<http://www.turnitin.com>).

### ACCESSIBILITY STATEMENT:

Please contact the course instructor if you require material in an alternate format or if you require any other arrangements to make this course more accessible to you. You may also wish to contact Services for Students with Disabilities (SSD) at 661-2111 x 82147 for any specific question regarding an accommodation

### STUDY / LIFE BALANCE:

Learning-skills counsellors at the Student Development Centre (<http://www.sdc.uwo.ca>) are ready to help you improve your learning skills. They offer presentations on strategies for improving time management, multiple-choice exam preparation/writing, textbook reading, and more. Individual support is offered throughout the Fall/Winter terms in the drop-in Learning Help Centre, and year-round through individual counselling.

Students who are in emotional/mental distress should refer to Mental Health@Western <http://www.uwo.ca/uwocom/mentalhealth/> for a complete list of options about how to obtain help.