



**EEB 362H1F: Macroevolution**  
Department of Ecology & Evolutionary Biology

**Course Syllabus Fall 2014**

**Course Description:** This course explores patterns of large-scale evolutionary change, played out over large geographic expanses and extended periods of time, and integrates patterns with field and experimental studies to clarify evolutionary processes. Topics include: origins of species and their adaptations, historical biogeography, co-evolution, radiations and extinctions, fossils and macroevolutionary patterns and the role of evolutionary information in conservation and biodiversity initiatives. Tutorials emphasize methods used to reconstruct phylogenetic relationships and the sequence of character evolution. **Prerequisite:** BIO120H1, BIO220H1/BIO150Y1

**Purpose and Objectives of the Course:** The objectives of the course include: (1) to provide an overview of macroevolutionary theory, (2) to learn principles of phylogeny reconstruction, character evolution and character optimization and (3) employ phylogeny-based comparative methods to discover and evaluate macroevolutionary patterns and processes.

**Lecture Times:** 9:00-11:00 Wednesday; Tutorial 9:00-11:00 Friday

**Lecture/Tutorial Location:** Room 110 RW

**Lecturers:** Prof. McLennan (deborah.mclennan@utoronto.ca); Prof. Evans (d.evans@utoronto.ca)

**Teaching Assistants:** Sarah Steele (sarah.steele@utoronto.ca), Kevin Kong (kevin.kong@utoronto.ca)

**Texts:**

DR Brooks and DA McLennan. 2002. *The Nature of Diversity: An Evolutionary Voyage of Discovery*. Chicago, Illinois: University of Chicago Press. (Strongly recommended, U of T Bookstore or used)

Wiley, E.O., D. Siegel-Causey, D.R. Brooks, and V.A. Funk. 1991. *The Compleat Cladist: A Primer of Phylogenetic Methods*. Special Publication No. 19, University of Kansas Museum of Natural History. Lawrence, Kansas. (Required). **Download from the course website on Blackboard.**

**Course Website:** Access through Blackboard via the U of T Portal. We will make every effort to post lecture outlines on Blackboard at least 24 hours before the corresponding lecture, note however these will not include all of the material in the lectures so you really do need to take notes!

**Office Hours:**

Prof. McLennan: Wednesday 11:00-12:00 (RW 518)  
Prof. Evans: TBA; Sarah Steele: TBA; Kevin Kong: TBA

Don't be afraid of the ROM! If you want to see Prof. Evans during his office hours, come to the Staff Entrance of the ROM (beside the South Entrance) and ask for him at the Security Desk. He will then come down and sign you in.

If you want to meet outside of our office hours, please make an appointment after lecture (or via e-mail if you have been unable to attend classes). **We will always find time to talk with you.** Please do not drop by unannounced outside of office hours unless you have an emergency.

### **Lecture and Tutorial Schedule:** (CC= Compleat Cladist)

Date	Lecture (9-11)	Date	Tutorial (9-11)
September 10	Introduction	Sept.12	CC Chapters 1,2
Sept. 17	Species concepts	Sept. 19	<b>Quiz (5%)</b>
Sept. 24	Speciation modes	Sept. 26	CC Chapter 3, 4
Oct. 1	Adaptation 1	Oct. 3	Different types of data and methods of analysis
Oct. 8	Adaptation 2	Oct. 10	<b>QUIZ (10%)</b>
Oct. 15	Adaptation 3	Oct. 17	study for midterm
Oct. 22	<b>MIDTERM (40%)</b>	Oct. 24	How to write a critique
Oct. 29	Radiations 1	Oct. 31	Discuss practice critique 1
Nov. 5	Discuss practice critique 2	Nov. 7	<b>CRITIQUE (10%)</b>
Nov.12	Radiations 2	Nov.14	free
Nov. 19	Fossils / macroevolution	Nov. 21	Community evolution/ biodiversity
Nov. 26	ID and evolution hand back critiques	Nov. 28	free to begin studying for final

**Marking Scheme:** Tutorial quiz: 15%; Midterm: 40%; Critique: 10%; Final: 35%

Both the midterm and the final include (i) questions that require you demonstrate your understanding of concepts (e.g., the definition of an adaptation, how to identify different kinds of speciation modes, etc.) AND (ii) questions will require that you take that knowledge and apply it to solving a problem. There are no multiple-choice questions on any of the lecture exams!

- The Midterm Exam will be held in the regular class period on October 22<sup>nd</sup> **in the regular lecture room (rm. 110 RW)**
- The Final Exam takes place during the regularly scheduled examination period.

The midterm and the final will have essentially the same format. They will both include approximately half short answer questions and half longer answer problems. The final exam emphasizes material covered in lectures after the midterm (but you will have to retain basic concepts from the beginning of the course!).

### Missing the midterm, the critique or the tutorial quiz:

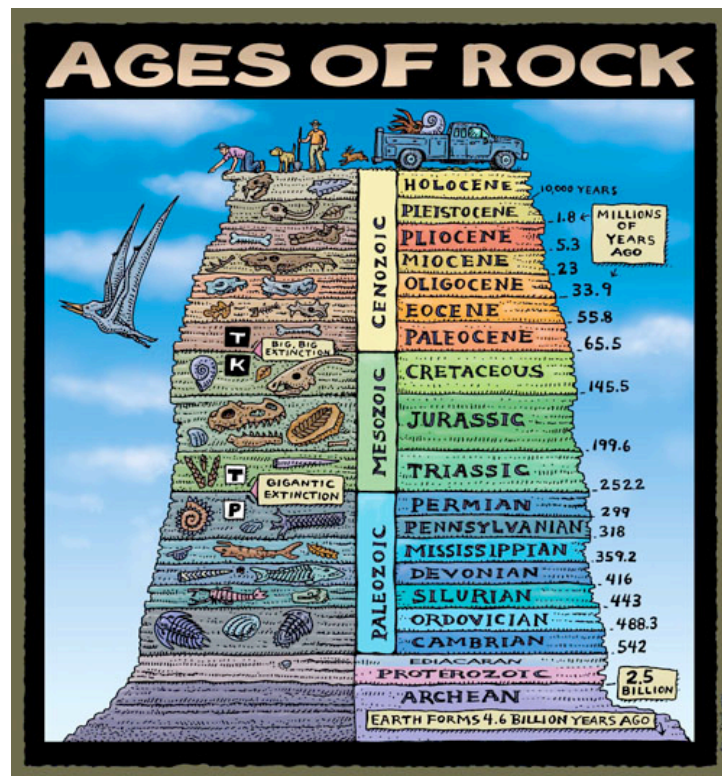
- get in touch with Prof. McLennan (midterm, critique) or Sarah Steele (tutorial quiz) within 72 hours of missing the exam to set a time for writing the make-up.
- bring a signed medical certificate with you to the make-up exam.

**Asking for a re-mark of the midterm, critique or tutorial quiz:** You have one (and only one) week after the return of your exam to request a remark.

If you return an exam that has been altered in any way, we cannot accept it for re-marking, but we will keep it. It is a serious offense to alter an examination then request that the altered exam be remarked. Please don't try this - you have far too much to lose if you are caught. In other words, *do not write on, or in any other way change, the exam if you want to have it re-marked.*

**Questions prior to exams:** If you have more than one or two quick questions, make an appointment to talk with us. Please don't e-mail long lists of questions. Resist the temptation to e-mail question after question at midnight before an exam – we will not answer them!

**Most importantly, relax (but work hard) and have fun learning about the ways in which biological diversity has evolved!**



Ray Troll art ([www.trollart.com](http://www.trollart.com))

## **The following is general information from the University of Toronto:**

**If you miss the final exam:** you have to contact your College Registrar (**professors cannot schedule a make-up for the final exam**). You have to petition to write the final at a time determined by the Faculty of Arts and Science. The following is from the 2014-15 Faculty of Arts and Science Calendar (page 702):

**Petitions Regarding Examinations:** Students are expected to write their examinations as scheduled. Only in cases of documented debilitating illness or legitimate conflict should a student request a deferral of a final examination. Students who are too ill and/or incapacitated at the time of the examinations should petition to defer the examination they are unable to attend due to their medical condition. Petitions based on travel, employment, or personal plans will not be considered as students are expected to make themselves available during the published Examination Period to write final examinations. In response to a petition for a deferred examination, a student may be granted the opportunity to write a special examination at a subsequent examination period or the regular examination in the next offering of the course. Satisfactory documentation must be provided to corroborate illness. Students with chronic illnesses must provide medical documentation for the specific date on which the illness was acute, or a letter from Accessibility Services for those registered for such a disability (indicating they were seen at the time of flare up, etc.).

Students who have missed an examination and are requesting a deferral must submit a petition no later than one week after the end of the examination period through their college registrar. There is a fee of \$70.00 per deferred examination (maximum \$140.00 for multiple deferral requests in the same petition). In the petition decision students are notified of the examination period in which the deferred examination will take place, and if the examination will be a regular or special examination. They must register to take the deferred examination and pay the fee by the deadline given, in order that arrangements can be made. The Faculty will notify those who do not register by the deadline that they have lost their privilege of a deferred examination and will revert the grade to one that includes a “0” for the final examination. No further consideration will be given. The Faculty posts personal deferred examination schedules online for students who have paid the deferred examination fee as soon as possible after the regular examinations have been scheduled.

**If you want a recheck or reread of the final exam** (from the 2014-15 Faculty of Arts and Science Calendar, page 703):

If a student believes an error has been made in the calculation of marks or in the marking of a Faculty final examination, there are two procedures, which can be followed to request a review of marks.

**Recheck of Course Mark:** If a student believes that there has been an arithmetical error in calculating the course mark, he/she may request a “recheck.” This can be done with or without requesting a photocopy or viewing of the final examination. The student must fill out a “Request for Recheck of Course Mark” form and submit it to the Office of the Faculty Registrar within six months of the final examination (see list of deadlines in calendar). Whenever possible, the student should indicate precisely where he/she thinks the error has occurred. The Department concerned will check that the examination marks have been added correctly; the examination will not be reread. The Department will also check that all term work marks have been correctly calculated. There is no fee for this procedure. If the mark is changed as a result of this review, the \$15.00 exam photocopy fee (if paid) will be refunded.

**Reread of Faculty Final Examination:** If a student believes that a final examination has been incorrectly marked in its substance, or that a portion of an examination has not been marked, he/she may

request a “reread.” The student must first purchase a photocopy or request a supervised viewing of the exam. The student must then fill out a “Request for Reread of Final Examination” form and submit it to the Office of the Faculty Registrar within six months of the final examination (see list of deadlines below). The student must demonstrate that his/her answers are substantially correct by citing specific instances of disagreement, supported by such documentary evidence as course handouts, textbooks, lecture notes, etc. The student must do more than simply assert that “I disagree with the marking,” or that “I believe I deserve more marks.” The Department concerned will reread the examination in light of the arguments presented. There is a \$36.00 fee for this procedure, which is in addition to the fee of \$15.00 charged for a photocopy of the final examination. If the mark is changed as a result of this review, both the photocopy fee (if paid) and the reread fee will be refunded. It should be noted that when a course is failed, the examination must be reread before the mark is reported.

NOTE: A recheck or reread may result in a raised mark, a lowered mark, or no change. By requesting a reread or recheck a student agrees to abide by the outcome. For some examinations, particularly those with multiple-choice questions and/or designed to be read mechanically, there may be an answer key that is essential to the understanding of the marking of the examination. In such cases, an answer key should be included with your photocopy. If it is not, you may contact the relevant department to see if one is available.

Forms are available at the Office of the Faculty Registrar, or on the web at [www.artsci.utoronto.ca/current/exams/rr](http://www.artsci.utoronto.ca/current/exams/rr)

**Studying old exams:** final exams from this course are posted on Blackboard. Please feel free to study from them, but do not ask us for an answer key.

**Academic Support:** If you have a disability, **Accessibility Services** is your home base for support. It is important to contact the office as soon as you are accepted to U of T so that accommodations for your needs are in place before classes start. All information about your disability is confidential and won’t be shared with units outside of Accessibility Services without your consent. [www.accessibility.utoronto.ca](http://www.accessibility.utoronto.ca). 416-978-8060.

If you’re facing challenging personal circumstances that are affecting your academic performance, feel free to seek emotional and psychological support from U of T’s **Counselling and Psychological Services (CAPS)**. [www.caps.utoronto.ca](http://www.caps.utoronto.ca). 214 College St. Main Fl.; 416- 978-8070.

**Email Policy:** Please note that the University has the following policy on the Appropriate Use of Information and Communication Technology (see [www.enough.utoronto.ca](http://www.enough.utoronto.ca)):

- **Some servers (such as hotmail) can be unreliable in both sending and receiving messages.** We thus encourage you to send mail using your UTORmail email account.
- **Forwarding your utoronto.ca email to a Hotmail, Gmail, Yahoo or other type of email account is not advisable. In some cases, messages from utoronto.ca addresses sent to Hotmail, Gmail or Yahoo accounts are filtered as junk mail, which means that emails from your course instructor may end up in your spam or junk mail folder.**
- Each email message must include in the Subject line the course identifier and a concise and clear statement of purpose [e.g., ECO100Y: I have a conflict with next test]; otherwise it is likely to be deleted, along with spam messages and messages potentially containing viruses.
- **Please make sure you consult the course outline/syllabus, other handouts, and the course website BEFORE submitting inquiries by email.**
- **When a question cannot easily or briefly be answered with a reply email, you should see the instructor during the announced office hours. Email should NOT be used as a mechanism**

**to receive private tutorials (especially prior to tests) or to explain material that was covered in lectures you missed.**

**Logging in to your Blackboard Course Website:** Like many other courses, EEB362 uses Blackboard for its course website. To access a Blackboard-based course website, go to the UofT portal login page at <http://portal.utoronto.ca> and log in using your UTORid and password. Once you have logged in to the portal using your UTORid and password, look for the **My Courses** module, where you'll find the link to the EEB362 course website along with the link to all your other Blackboard-based courses.

**Activating your UTORid and Password:** If you need information on how to activate your UTORid and set your password for the first time, please go to [www.utorid.utoronto.ca](http://www.utorid.utoronto.ca). Under the "First Time Users" area, click on "activate your UTORid" (if you are new to the university) or "create your UTORid" (if you are a returning student), then follow the instructions. New students who use the link to "activate your UTORid" will find reference to a "Secret Activation Key". This was originally issued to you when you picked up your Tcard at the library. If you have lost your Secret Activation Key you can call 416-978-HELP or visit the Help Desk at the Information Commons on the ground floor of Robarts Library to be issued a new one. **The course instructor will not be able to help you with this.** 416-978-HELP and the Help Desk at the Information Commons can also answer any other questions you may have about your UTORid and password.

**Email Communication with the Course Instructor:** At times, the course Instructor may decide to send out important course information by email. To that end, all UofT students are required to have a valid UofT email address. You are responsible for ensuring that your UofT email address is set up AND properly entered in the ROSI system. You can do that by using the following instructions: To submit the information to activate your UTORid and password (see above), you will need to click the "Validate" button. Follow the instructions on the subsequent screens to receive your utoronto.ca address. Once you have your UofT email address, go to the ROSI system ([www.rosi.utoronto.ca](http://www.rosi.utoronto.ca)), log in and update the system with your new UofT email address.