The aim of this course is to introduce students to contemporary trends in evolutionary biology. Students will learn how to analyze primary scientific literature and situate the development of new research programs, and to examine the complex relations between theory and techniques. They will work in groups, write essays, and give oral presentations. Suggested research topics may include: Evolutionary medicine, Human Origins, Symbiogenesis, Origins of Eukaryotes, Phylogeography, Molecular Ecology, Epigenetics, Hybridization, Neutral theory of biodiversity, Wolbachia Viruses, Origins of life, Cosmic Evolution, Gene therapy.

**Required Reading:** Jan Sapp, *The New Foundations of Evolution*. New York: Oxford University Press, 2009. Lectures will be placed on course moodle site. Other readings for student essays are

**Assessment:**

*Class participation* Up to 10% of final mark will be deducted for lack of class attendance and participation. 5% deducted for two classes missed; 10% for three classes missed.

*Test:* 25% based on lectures and text, October 16.

*Research Proposal:* 10%, due date October 28. Assessment will be based on formulation of the research question of their essay, brief discussion of the significance of the field you will investigate, how you will investigated its origins and development. Two double-spaced pages, plus indicative bibliography.

*Presentation:* 15% Assessment will be based on the organization, oral and visual presentation of the research. 60 minutes per group plus 15 minutes for discussion. 10% will be deducted for presentations exceeding the allotted length of time.

*Essay:* 50% due December 9. Length 2000 words per student: 12 font double spaced. Assessed according to these criteria:

- identification, understanding, and analysis of primary sources, *i.e.* journal articles.
- ability to situate the topic within its larger historical setting
- Underscoring the theoretical and/or practical implications.
organization and coherence, writing style and grammar.

**MISSED test or missed due date on assignment:**

**Assignment and midterm dates** are non-negotiable. They have been structured to distribute your workload over the term. There are no alternative assignments that can be completed for students to increase marks.

- You MUST contact (email) me within TWO (2) days (48 hours) of missing a midterm test or assignment. If you missed the test with a legitimate documented reason, permission may be granted to take a makeup test. All documentation supporting your excuse for missing a test must be received within ONE (1) WEEK of the missed test, or assignment’s due date (or as soon as you are able to return to the university if you are ill for more than a week).

- Only a ‘York Attending Physician’s Statement Form’ (can be downloaded as part of the Petitions Package) OR a similarly detailed doctor’s note (i.e., NOT a form stating only that the student visited the clinic) will be accepted for medical excuses for missing tests and due dates for assignments. Documentation must cover the date of the missed test and/or assignment. Death of an immediate family member requires a death certificate or letter from the funeral director. Makeup tests may differ in format from the original test (i.e., include more short/long answer questions). If appropriate documentation is NOT provided within ONE (1) week, a zero will be earned on the missed test and/or assignment.

- NOT all situations will be accommodated; for those that are not, you will earn a zero on the missed midterm and/or assignment. Circumstances not accommodated include, but are not limited to: schedule confusion, sleeping in, missing the bus, rain or snow/ice causing increased travel time to campus, personal endeavours (including a job), busy lives (including too many assignments or tests that same week/day, etc.)

**Class Schedule**

September 11: introduction
September 18: Two Kingdoms Linnaeus Lamarck, and Darwin, *The New Foundations of Evolution, p. ix-84*
September 25: 5 Kingdoms, microbes and phylogenetics, *New Foundations, 85-161*
October 2: Three Domains Many Kingdoms, and the Tree of Life *New Foundations, 162-243*
October 9 Symbiosis and Lateral gene transfer *New Foundations 243-318*
October 16: test
October 23 workshop
October 30: **no class**
Student Presentations:
November 6
November 13
November 20
November 27