

Biology 9214

Teach the Controversy

A critical analysis of current claims against biological evolution. Students will analyze specific claims and present analyses of the relevant scientific literature. Topics may include (but are not limited to) the suddenness of the Cambrian explosion, irreducible complexity, the improbability of new functions, gaps in the fossil record, contradictory phylogenies, etc. The instructor will tie the various topics in a historical context and ensure that the discussion remains scientific in nature. Each student will be expected to present two analyses (30 min PowerPoint presentations). Evaluation will be based on the quality and rigor of these presentations. Students must participate in the evaluation process by writing short peer reviews of colleagues' presentations and returning them to the instructor in a timely fashion. Sessions (22 hours in total) will be scheduled at an organizational meeting. The last slide of each presentation will consist of an abstract of 100-150 words that will be examined critically for prosaic quality by the class during the discussion period. One session will be in "journal club" format, where each student will be assigned a paper to present briefly. **Attendance to all sessions is mandatory.**

Sources of controversy: Any literature, printed or web-based, that attacks biological evolution, usually for religious or political reasons. Please consult the course website (Google *Biology 9214*).

Sources of scientific rebuttals: Student presentations/discussions must be based for the most part on the primary scientific literature, with a preference for recently published journal articles. Recent review papers that summarize the literature relevant to a specific challenge are also acceptable. The popular literature or articles in educational journals may be used as complementary sources or as means of locating research papers.

Evaluation: Each student will participate in the evaluation process by providing, for each presentation, a short written critique that may include comments on the following points:

1. Relevance and quality of sources
2. Rigor of argumentation
3. Quality of presentation (focus, interest, timing)
4. Principal strengths and weaknesses

These comments will be tallied and communicated to presenters.

After each complete round of presentations, all participants will assign individual rankings following the categories A+ = outstanding, A = good, B = adequate, or C or less = inadequate. Each evaluator will be required to assign a specified minimum number of each of the first three categories, based on the number of registrants. The final mark will be assigned by the instructor based on feedback received by participants as well as his own evaluation. The approximate weight is 40% for each PowerPoint presentation and 20% for the journal club presentation.

Ethics: Peer evaluations will be expected to be fair and dispassionate. Sources of the information presented in class must be attributed in accordance to common practice in the scientific community. Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following Web site:

http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_grad.pdf

Instructor: M.A. Lachance - 2036 BGS - 661 3752 - lachance@uwo.ca