Purpose and Rationale: The course will provide an opportunity to explore recent advances in the field of comparative biomechanics through careful reading and discussion of selected articles from the primary literature. The course is intended for both beginning and advanced graduate students. It is designed to give insight into how to read and evaluate a scientific paper and will provide perspective on the scope of comparative biomechanics as a field. Some of the possible topics to be discussed include muscle structure and function, skeletal and connective tissue mechanics and function, animal locomotion in its many guises, the biomechanics of feeding, scale effects on biomechanics, biomaterials, ecomechanics, the biomechanics of development, and others.

Readings: We will focus on articles from the primary literature. The topics will be determined, in part, by the participants of the seminar. The instructor will assist in identifying appropriate papers.

Grading: The grade will be based on class participation, both as a discussion leader and as a discussion participant. The instructor will lead the discussion for the first few meetings of the semester. Following this initial phase, the discussion in subsequent weeks will then be led by each of the seminar participants. The role of the discussion leader is not to prepare a lecture, but instead to facilitate the discussion of the paper. In preparing for the class, the discussion leader should have identified the important issues and questions and to have thought about potential answers. Each student in the class will be responsible for reading and evaluating the paper, focusing on the following (from http://www.biochem.arizona.edu/classes/bioc568/papers.htm, a nice article on how to read a scientific paper):

1) What question does the paper attempt to address?
2) What are the primary conclusions of the paper?
3) What is the evidence for these conclusions?
4) Do the data support the conclusions?
5) What is the quality of the evidence?
6) Why are the conclusions important?

Based on this careful reading and evaluation, at least 24 hours before the class meeting, each student (except the discussion leader) will post 1-3 questions and comments to the forum on Sakai. The questions or comments should reflect a thorough reading and careful evaluation of the paper and should be original. To ensure that your questions are not influenced by those of your colleagues, it is best to prepare them before reading those already posted on the forum. The discussion leader will then compile the list of questions and comments and will make a copy for each member of the class. The questions and comments may be used by the discussion leader in guiding the discussion.