

METHODS AND LOGIC

LANDMARKS in BIOLOGY and MODERN METHODS

Purpose:

This class will be comprised of two parts. Part one will cover landmark papers in biological sciences and part two will cover recent methods in biological sciences. The learning goals of the course are twofold.

1. Read and understand the methods of landmark papers in biology.
2. Gain an in depth understanding of a select number of current biological methods.

Landmark papers assignments:

At the beginning of the semester, each student will be assigned a series of landmark papers to present during 2 class periods. Students are responsible for presenting and discussing the landmark papers to the class. Pdf files of the landmark papers are available on the course website.

Current methods assignments:

At the beginning of the semester, each student will select several current methods topics. Students are responsible for identifying and presenting several papers to the class that cover the current method topics. Pdf files of the papers have to be submitted to the instructor by e-mail no less than one week before the assigned class period. The pdf files will be put on this web-site for the class to download.

Selection criteria:

When selecting research papers, the following criteria must be followed:

- 1) One of the papers must have been published within the last 1-2 years, whereas the other can be an important background paper, constitute a different important discovery in the field or contradict the first paper.
- 2) The papers must contribute a significant methodological advance in understanding the biology of the topic.

Presentations:

The presentations should include: a) a description of the background of the topic, b) questions that the papers address, c) key research experiments, d) conclusion(s) from the results, and e) discussion of the results. Each presentation will be about 75 min. Each session will have one student presenting. The presentations will include a class discussion led by the student to critically analyze the reading material.

All students should read each article being presented carefully and critically before the presentation/discussion sessions.

Grades:

Your grad in the course will be determined by our presentations and participation in discussions as follows.

Landmark Paper Presentations 30%

Modern Methods Presentations 60%

Class Participation 10%

Each presentation will be graded from 1-10 (10 being the highest) by both the instructor and your peers. Your final score will be a weighted average of your peer scores (40%) and your instructor score (60%).