

Biology 501 Graduate Seminar
By JoVe: Biology & Bioengineering
Spring 2020

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Office Hours: Thursdays 11-12 PM, Fridays 3-4PM; JA315
Classroom: Jones Annex 218 (Ananda), Thursdays 5-6PM

Science drives technology and technology drives science.

Course Description: Special topics in biology. Readings, student presentations, and discussions will focus on a single topic within biology, with a different topic to be selected by the Biology faculty each semester.

Prerequisite: Graduate-level standing or consent of instructor and advisor

Place in Curriculum: A minimum of two credits of BIOL 501 are required for an MS degree. Biotechnology PhD students are normally expected to take BIOL 501 each semester that they are in residence on the New Mexico Tech campus.

Course Learning Outcomes: By the end of this course, the students should be able to evaluate a broad spectrum of detailed experimental methodologies used in biology and bioengineering.

Learning Objectives: to have explored and gained increased understanding of

1) biological experimental design and 2) the recent developments in biology and bioengineering as reflected in the Journal of Visualized Experiments (JoVE: <http://www.jove.com/>), the Biology & Bioengineering sections <https://www.jove.com/journal/biology> and <https://www.jove.com/journal/bioengineering>

Course requirements: Over the course of the semester, each student will present to class at least two separate, instructor pre-approved, JoVE papers of their choice. The first seminar presentation will be done with a partner, the second one alone. The talk will start with the introduction of the problem that the publication aims to resolve and the background of the relevant material. Time permitting, JoVE videos will then be viewed in class and followed by a Q&A dialogue. The presenting student(s) will lead the discussion throughout the hour. Focus will be on the experimental *details* employed in the article. The articles will be selected by individual students but require instructor approval at least eight days ahead of the presentation.

The presenting student(s) will inform the class of their selection at the end of the previous class. The non-presenting students will have read & pre-viewed that JoVE paper, summarized it in a typed half-page write up, and list a) 2-4 new/cool things that they have learned, and b) 2-4

specific questions to ask of the presenting students. These questions will be asked & addressed in class by the presenter, the class and/or the instructor, and the write-ups turned in to the instructor at the end of that presentation.

Exams: There will be no exams.

Grading: Grades will be based on the presentations, the write-ups and class participation.

Most importantly: immerse yourself into this exploration and enjoy learning about all the cool science and engineering that are happening in front of your eyes.

Academic Honesty: New Mexico Tech's Academic Honesty Policy for undergraduate and graduate students is found in the student handbook, which can be found at: <http://www.nmt.edu/student-handbook>. You are responsible for knowing, understanding, and following this policy.

Reasonable Accommodations:

New Mexico Tech is committed to protecting the rights of individuals with disabilities. Qualified individuals who require reasonable accommodations are invited to make their needs known to the Office of Counseling and Disability Services (OCDS) as soon as possible. To schedule an appointment, please call 835-6619.

Counseling Services:

New Mexico Tech offers mental health and substance abuse counseling through the Office of Counseling and Disability Services. These confidential services are provided free of charge by licensed professionals. To schedule an appointment, please call 835-6619.

Respect Statement: New Mexico Tech supports freedom of expression within the parameters of a respectful learning environment. As stated in the New Mexico Tech Guide to Conduct and Citizenship: "New Mexico Tech's primary purpose is education, which includes teaching, research, discussion, learning, and service. An atmosphere of free and open inquiry is essential to the pursuit of education. Tech seeks to protect academic freedom and build on individual responsibility to create and maintain an academic atmosphere that is a purposeful, just, open, disciplined, and caring community."

Title IX Reporting: Sexual misconduct, sexual violence and other forms of sexual misconduct and gender-based discrimination are contrary to the University's mission and core values, violate university policies, and may also violate state and federal law (Title IX). Faculty members are considered "Responsible Employees" and are required to report incidents of these prohibited behaviors. Any such reports should be directed to Tech's Title IX Coordinator (Dr. Peter Phaiah, 20D Brown Hall, 575-835-5187, titleixcoordinator@nmt.edu). Please visit Tech's Title IX Website (www.nmt.edu/titleix) for additional information and resources.