Western Kentucky University

Department of Biology

BIOL 516 Investigations/Biology

Syllabus and Course Information

Each semester faculty members in the Department of Biology can serve as mentors for a non-thesis research project. The general framework of the course is the same each term but an individual instructor will create specific components to the course depending on the needs of the student and the type of research.

Instructor: Dr. Simran Banga

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Office Hours: By appointment with course instructor

Course Information:

Course Credit: 1-3

BIOL 516 is a Non-thesis biology research project wherein a student works on a hypothesis based scientific inquiry and experimental design on a research topic of interest with the instructor. The purpose of the course is to provide experience in the scientific research process through a series of steps involving literature review, conceptualization of hypothesis, objectives & experimental approach, methods of data collection and analysis to discussion of expected results.

Based on their interest the student will communicate with the instructor and develop a research proposal as it can be used for real experimentation. A students will write a proposal highlighting a research question, background information and rationale for the problem/question, experimental approach to answering the question, the expected results and analysis tools to conclude their findings. The student will work with the instructor on a draft and a final proposal will be submitted in a research paper style format for a grade.

The following serves as a general syllabus.

Meeting Location	To be determined by the Instructor
Meeting Time	To be determined by the Instructor
Prerequisites	Consent and approval from Instructor
Course Description	A study involving a research project for Non-thesis MS students under faculty supervision.
Required Text	To be determined by the Instructor
Minimum time commitment/week	1 hr credit: 3 -5 hours 2 hr credit: 6 -8 hours 3 hr credit: 9 -12 hours

Objectives - Students will:

1) be exposed to the scientific process through a development of a proposal
2) gain knowledge and experience with scientific procedures
3) be introduced to the primary literature,
4) learn to construct and carry out a scientific study or parts thereof
5) learn to generate bibliography using citation tools
6) think critically to analyze data/results
7) be able to model a scientific research process

Learning Outcomes: from this class students should be able to

1) Explain the role of scientific research in the scientific process
2) Discuss ideas and procedures related to the specific area of research under study
3) Formulate scientifically valid research questions and experimental approaches to said questions
4) Design experiments, predict data based on hypothesis and analyze data
5) Write in a scientific style paper.

Grading:
Students will be evaluated on the basis of following criteria:

Selection of the topic:	10 points
Literature review and synthesis of hypothesis:	25 points
Submission of Project outline:	15 points
Submission of first draft:	50 points
Final proposal:	100 points
Total	200 points

A final letter grade will be awarded according to the following scale: A: 90-100%, B: 80-89%, C: 70-79%, D: 60-69%, F: less than 60%

Course Policies

Academic Accommodation	Students seeking academic accommodation for a disability must follow University policy by furnishing the professor with an accommodation letter from Student Disability Services.
Academic Honesty	Students are expected to adhere to the University's Academic Dishonesty Policy. Please review this policy. **The minimum penalty for academic dishonesty in this class is course failure.** *Dishonesty, such as cheating, plagiarism, misrepresenting of oneself or an organization, knowingly furnishing false information to the University, or omitting relevant or necessary information to gain a benefit, to injure, or to defraud is prohibited.* Student Conduct Code: http://wku.edu/judicialaffairs/?page_id=70
Civility	Students are expected to communicate in a civil manner in academic interactions in and out of the classroom. This means that interactions with both peers and professors are to be carried out in a polite, courteous, respectful and dignified manner. Failure to behave in a civil manner may result in disciplinary action as described by the Student Conduct Code. S*tudents are encouraged to actively support ethical behavior in all aspects of University and community living; civil discourse among all members of the campus community, treating each student with dignity and respect regardless of personal differences.* The WKU student conduct code can be viewed at https://wku.edu/studentconduct/student-code-of-conduct.php More detailed information about University policies and services related to students is available at https://www.wku.edu/syllabusinfo/index.php
Withdrawal Policy	The last date to withdraw without financial or academic penalty is available at the WKU website for the academic calendar