Example Course Syllabus Design
Illinois Summer Teaching Institute Final Assignment

Course: Introduction to Research for Biological Sciences

COURSE SUMMARY:

This course is designed for upper division biology undergraduates to begin thinking critically about biology they learn in their other classes by designing their own research projects. Throughout the semester, students will be guided through critical thinking exercises and mini-projects that will come together at the end of the semester as their own designed research project. Course will be majority in-person except for a few lecture heavy sessions noted in the schedule which will take place online. Students are welcome to attend those classes in person or on zoom.

LEARNING OUTCOMES:

- Students will learn critical thinking skills involved in doing literature searches for biological sciences.
- By the end of the course, students will understand how to dig through peer reviewed literature to find articles relevant to their research topic.
- Students will learn to identify and evaluate research designs used to answer similar questions to their own and use those to design their own experimental design.
- Students will learn how to communicate the basis of their research project to the general public.

SEMESTER TOPIC SCHEDULE

This course will be split into 4 major topics to allow students to understand the above stated learning outcomes:

I. Introduction to journal articles
II. Choosing peer-reviewed journals based on relevance
III. Designing research projects
IV. Communicating your research

OFFICE HOURS

Office hours will be held weekly, Wednesdays from 4-6PM, or by appointment. Students are welcome to come by office hours even if they do not have questions and just want to listen to other student questions, or work in an environment where they have easy access to the course instructor.

COURSE ENGAGEMENT

Most courses will be flipped meaning that students are to complete course readings at home and complete in-class activities and discussions to reflect and practice what they have learned. In class activities will involve applying concepts learned from pre-class assigned readings and making progress on research project design. Pre-class assignments will involve thinking critically about assigned readings and coming to class prepared to discuss the readings or clarify any questions. Students will be asked to do a pre-discussion activity on Jamboard which will be used to continue the in-class discussions. In class projects will occur in small groups – groups will be assigned based on where students are sitting, but students are free to choose their seats for every class. Students are expected to be active participants in their groups and will receive participation credit for doing so. The instructor will come around during groupwork sessions to answer any questions and facilitate discussions if needed. Instructor will work through practice problems with the class so that students get a chance to review what they learned and determine whether they understand concepts or have lingering questions. Students will be expected to participate in problem solving sessions to receive participation credit.

COURSE ASSESSMENT

Students will be evaluated on participation during weekly group projects (in class), and pre-class assignments. We will have at least one "poll"-type question per week to gauge student's understanding of the material. Students will be graded on participation. 80% participation in clicker questions will translate to full attendance credit for the course. Students will have a final project- a culmination of all the parts of the research project design they will be working on throughout the semester. For project completion, students will make a poster about their research design and give a 10-minute presentation about their work. Students will demonstrate the thought process that went into designing their project throughout the semester and demonstrate the research presentation skills they learned in the course, with an emphasis on keeping it concise and exciting to others who are not experts in their field. Rubric is provided for all projects, additional questions may be addressed in class, office hours or via e-mail. In-depth feedback will be provided to allow students to learn from the attempts made in this class and learn how they can improve in the future when they go on to design research projects for their careers. Students will be expected to reflect on their projects upon completion based on peer and instructor feedback

COURSE GRADING

Participation	100 points (80% participation = 100 points)
Class polls	100 points (80% participation = 100 points)

Research Design Project: Annotated Sources Document	100 points
Research Design Project: Research Design Draft	200 points
Research Design Project: Elevator Pitch	150 points
Research Design Project: Research Design Draft	200 points
Research Design Project: Poster Presentation	400 points
Research Design Project: Reflection	50 points
Class Total:	**1500 points**