OPTI 689 – Optics Instruction and Mentoring

Semester and Year this Document Covers
Spring 2023

Course Number and Title
OPTI 689 Optics Instruction and Mentoring

Instructor Information
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Course Description
Graduate students learn how to teach a course and mentor undergraduate and graduate students in the College's outreach course (OPTI 489/589). Up to two students learn how to design lectures, lead lectures, develop assignments, lead class demonstrations, and work with course instructor technology (e.g., D2L), and how to assess their instruction and course learning outcomes. The students meet with the OPTI x89 instructors weekly to talk about the previous lecture, the upcoming lecture, and the logistics and administration of the outreach course. This course provides the opportunity for interested students to learn more about effective teaching methods, determine if they like teaching at the college level, how to prepare lectures, and how to assess course instruction.

Course Pre-Requisites
Required: either OPTI 489 or OPTI 589

Course Format and Teaching Methods
Live in-person lectures and in class discussions.

Course Objectives
The students will make and give lectures and optics demonstrations that they provide to other optics students in OPTI 489 and OPTI 589. The objective is to learn how to effectively do such to better learn how to instruct and present in front of an audience of students. Additionally, the students will provide an overarching assessment of OPTI 489/589 and recommend changes to it. The latter ensure that OPTI 489/589 grows into a more effective outreach course for the Wyant College of Optical Sciences, while also teaching the students how to critically assess their work.

Expected Learning Outcomes
At the conclusion of this course, the students will know how to:

- Plan and develop a course's syllabus, lectures, and assignments;
- Lecture effectively to undergraduate and graduate students;
- Assess a course and the effectiveness of individual lectures; and
- Work effectively in a team environment with instructors and students.

400/500 Co-convened Course Information
Not co-convened.

Required Texts and Materials
No required texts. All materials needed in the course will be provided by the College, especially the Teaching Labs.

Schedule of Topics and Activities
The students in this course will be actively teaching OPTI x89, which has the following course format and teaching methods:

> This course consists of in-class lectures and demonstrations provided by the instructor. Students will be required to fulfill both in-class and out of class assignments.

Students are required to fulfill their outreach requirements in a variety of in-person and/or virtual demonstrations. The out of class requirements are as follows:

- At least one presentation/demonstration in-person, or as allowed, as the primary presenter with a high school/community college class or high school level event or community college level event
- At least 1 on-campus demo presentation for ENGR 102 students (exempt if class conflict)
- Multi grade level recorded demo presentations
  - 15-minute elementary/middle school presentation
  - 15-minute high school presentation
- Pick at least 2 outreach activities from the following
  - In-person demo at any level of school or organization or at an OSC organized outreach event. These events can be done solo or in conjunction with classmates or other OSC students
  - On-campus demo presentation to ENGR102students (Mondays at either 11:50or 12:50 in Engineering 214)
  - Outreach pamphlet
  - 10-minute YouTube video through OSC account
  - Update one demo on the webpage
  - Pick an Optics Museum item(s) that has not been researched. Research that item, make a short report (under a page) and a video
- Graduate level students will give thesis dissertation talk in class

In class requirements are as follows:

- In-class 5 minute flash presentation/demo on any topic of their choosing
- High school presentation prior to going to high school
- Both the 15 minute elementary/middle school and the 15 minute high school presentation

Assessments

Assessment Categories	**Percentage of final grade**
Attendance and participation in class activities • Instructor meetings (15) • OPTI x89 lectures (15) • Other events as planned	30%
Lecture plans for OPTI x89 (7)	30%
OPTI x89 D2L website review	10%
Final report	30%
Total	100%

Final Examination or Project

There is a final report due at the conclusion of the course. In this report the following items are to be included:

- Synopsis of how OPTI x89 went during the semester,
- What needs to be changed, added, updated in OPTI x89,
- What did you learn about lecturing, mentoring, developing assignments,
- What did you expect before you started the semester to what actually happened,
- What would you do differently,
- What did you learn, and
- Jointly if there is another instructor or by yourself, assess the effectiveness of the lectures, assignments, and the course overall.

Grading Scale and Policies

The following grades will be assigned in this course:

- A 90% - 100%
- B 80% - 89%
- C 70% - 79%
- D 60% - 69%

- E < 60%

A: Excellent – has demonstrated a more than acceptable understanding of the material; exceptional performance; exceeds expectations
B: Good – has demonstrated an acceptable understanding of the material; adequate performance; meets expectations
C: Average – has not demonstrated an acceptable understanding of the material; inadequate performance; does not meet expectations
D: Poor – little to no demonstrated understanding of the material; exceptionally weak performance
E: Failure – usually reserved for non-attendance

Nondiscrimination and Anti-harassment Policy

The University of Arizona is committed to creating and maintaining an environment free of discrimination. In support of this commitment, the University prohibits discrimination, including harassment and retaliation, based on a protected classification, including race, color, religion, sex, national origin, age, disability, veteran status, sexual orientation, gender identity, or genetic information. For more information, including how to report a concern, please see: http://policy.arizona.edu/human-resources/nondiscrimination-and-anti-harassment-policy

University Policies

All university policies related to a syllabus are available at: https://academicaffairs.arizona.edu/syllabus-policies.

Subject to Change Notice

Information contained in the course syllabus, other than the grade and absence policies, may be subject to change with reasonable advance notice, as deemed appropriate by the instructor of this course.

Graduate Student Resources

University of Arizona's Basic Needs Resources page: http://basicneeds.arizona.edu/index.html