Science Teaching and Outreach (STO)

STO F601  Communicating Science
2 Credits
Offered As Demand Warrants
This highly interactive course allows students to gain hands-on experience with teaching and communicating science to public audiences. Over the course of the semester, students will lead programs in K-12 school settings, develop a presentation and present their own science to peers. Students will also explore pedagogical theory, and learn how to use active and inquiry-based teaching strategies.
Prerequisites: Graduate standing.
Lecture + Lab + Other: 2 + 0 + 0

STO F602  Mentoring in the Sciences
2 Credits
Offered As Demand Warrants
This course provides a forum for graduate students to develop their mentoring philosophy and build effective mentoring skills. Effective mentoring can be learned, but not taught. Good mentors are normally produced through years of practice, successes and failures, and no two mentoring situations are alike. This course seeks to provide a discussion and learning environment for accelerating the process of learning to be a mentor. Through discussion of case studies, activities and readings provided in course materials, students will consider mentoring philosophy, articulate it, anticipate challenges and effective solutions to a variety of mentoring issues.
Prerequisites: Graduate standing.
Lecture + Lab + Other: 2 + 0 + 0

STO F603  Instructional Design
1 Credit
Offered As Demand Warrants
This graduate seminar course will address important components of course planning and instructional design that reflect best practices in science teaching. This course focuses on the overall design of courses, the integration of the various components of a course, the development and implementation of summative assessments and syllabus construction. The course format will consist of reading and discussion, seminars and workshops.
Prerequisites: Graduate standing.
Lecture + Lab + Other: 1 + 0 + 0

STO F604  Science Teaching and Outreach Internship
4 Credits
Offered As Demand Warrants
Under the supervision of a faculty member, students gain professional experience in science teaching or outreach by choosing one of the following strands: 1) higher education, 2) formal K-12 education, or 3) informal education. An internship plan is developed prior to enrollment and agreed upon by the instructor of record, faculty mentor or K-12 teacher mentor, and student.
Prerequisites: STO F666 for higher education strand or STO F601 for formal K-12 education or informal education strand.
Lecture + Lab + Other: 0 + 0 + 12

STO F666  Scientific Teaching
2 Credits
Offered As Demand Warrants
This course explores methods for teaching science at the university level. Emphasis is placed on methods of course design, instructional techniques, assessment and course management that have been shown by research to improve student learning. This course is intended for graduate students in the sciences who have an interest in improving their teaching skills. The course format will be a mixture of discussion, workshops and seminars. If the course is over-enrolled, priority will be given to teaching assistants who are assigned to teach large, introductory level (100 or 200 level) courses during the semester they are taking this course.
Prerequisites: Graduate standing.
Lecture + Lab + Other: 2 + 0 + 0

STO F692  Current Topics in Scientific Teaching
1 Credit
Offered Alternate Fall
This graduate seminar course explores current trends in science education at the pre-college and college levels. Topics may include diversity, technology, active learning, and others. The course will rely on readings from primary literature and discussion.
Prerequisites: Graduate standing.
Recommended: STO F666 or STO F601.
Lecture + Lab + Other: 1 + 0 + 0

STO F692P  Current Topics in Scientific Teaching
1 Credit
Offered Alternate Fall
This graduate seminar course explores current trends in science education at the pre-college and college levels. Topics may include diversity, technology, active learning, and others. The course will rely on readings from primary literature and discussion.
Prerequisites: Graduate standing.
Recommended: STO F666 or STO F601.
Lecture + Lab + Other: 1 + 0 + 0