

School of Materials Science and Engineering

TEACHING PRACTICUM (3 credit hours)

Instructors:

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Goal:

The MSE Teaching Practicum course is intended for advanced Ph.D. students working in close collaboration with a faculty member (Teaching Mentor) for the delivery of an undergraduate course in the MSE curriculum, and learning about what it takes to be a faculty in an academic setting. The course will involve: (a) in-class delivery of a three hour sequence of lectures over a complete subject area in the presence of the faculty teaching mentor; (b) evaluation of the teaching effectiveness by the faculty mentor along with at least one of the course instructors, and a survey prepared by the students in the class; (c) developing and grading homework assignments and/or examination problems; (d) having regular office hours for students to supplement those of the faculty instructor of the course. The students will learn about the skillsets needed for “delivery of a lecture” via the practice of teaching and active in-class discussions on various topics including those presented by guest lecturers.

Learning Objectives:

Upon completion of this course, students will be able to:

1. Know the process needed to develop a course, including teaching philosophy, goals and objectives, content, examinations and homework, and grading policy.
2. Be familiar with skillsets needed to deliver classroom lectures, as well as the various facets of an academic career and faculty lifestyle.
3. Have the guidance and preparation for interviewing for faculty positions, teaching and research philosophy, and proposal writing.

Reference Textbook:

Teaching Engineering, by P.C. Wankat & F.S. Oreovicz (McGraw-Hill, Inc., 1993), can be downloaded, free of charge, from

https://engineering.purdue.edu/ChE/AboutUs/Publications/Teaching_Eng/index.html.

Grading:

- Class participation
- Evaluation of the 3 hour lecture
- Final Written Report

Attendance: Attendance will be required; only excused absence will be permitted.

Academic Integrity:

All students are expected to abide by the obligations and expectations associated with the Georgia Tech Academic Honor Code and Student Code of Conduct, available online at www.honor.gatech.edu. The nature of this course requires mandatory attendance for all lectures, except for excused absence. Any form of plagiarism in final report, including reproducing the words of others without appropriate citation or use of quotation marks will not be allowed.

Learning Accommodations:

If needed, we will make classroom accommodations for students with documented disabilities. These accommodations must be arranged in advance and in accordance with the Office of Disability Services (<http://disabilityservices.gatech.edu>).

Schedule of Topics (1 hour session per week):

- Week 1: Introduction and Expectations of the course
- Week 2: Effective teaching methods*
- Week 3: Class Discussion on published material related to effective teaching methods
- Week 4: Development of course objectives, testing and grading*
- Week 5: Lecture versus laboratory classes*
- Week 6: MOOCs and other similar on-line options*
- Week 7: Use of technology*
- Week 8: Panel discussion on delivery methods: power point versus conventional note taking
- Week 9: Problems and challenges experienced with teaching*
- Week 10: ABET and accreditation*
- Week 11: Intellectual property*
- Week 12: One-on-one student advising*
- Week 13: Panel discussion on an academic career and lifestyle*
- Week 14: Preparing for an interview for a faculty position
- Week 15: Writing white papers and proposals*
- Week 16: Final report

*Guest lecturers