



An Introduction to Evidence-Based STEM Teaching

Are you interested in ...

- pursuing an academic career?
- learning more about the ins and outs of effective teaching?
- becoming a more effective speaker and presenter?
- taking a massive open online course (MOOC) and getting credit?

Boston University is now offering a seven-week hybrid course on Teaching in STEM that combines online learning with one-hour, weekly in-person, faculty-led sessions. As part of the course, participants will discuss effective teaching strategies and the research that supports them and then apply these approaches to lesson design and assignments for future teaching opportunities. This course will be offered Fall 2015 (tentative: Sept 28-Nov 13) on both the CRC and the medical campus, with the date/time of the in-person component being determined based on the availability of the participants. The course is 2-credits for all graduate students or no-credit for postdocs and faculty. Please help us gauge the interest level at BUMC by contacting MaryAnn Campion (maryann@bu.edu) before **July 1st** if you would like to hear more about this course. For those who want to strengthen their teaching skills further, an advanced course will be offered Spring 2016.

Online component: Students will sign up for a massive open online course, “An Introduction to Evidence-Based Undergraduate STEM Teaching,” that has been jointly developed at Boston University, Vanderbilt, Michigan State and Wisconsin-Madison. The weekly online sessions will take between 1-2.5 hours of student engagement. The online materials will be video and readings followed by quizzes, written segments with peer-assessments, and online worksheets. The course will be highly interactive, with many opportunities for peer-to-peer learning.

In-person component: Students will meet with the faculty each week to go over the online material and relate it to their teaching experiences in labs, discussions, and classrooms. By blending the online materials and instruction with in-class sessions, the course is designed to achieve appropriate student preparation and initial self-reflection followed closely with small-group, peer- and active-learning directed by an instructor.

Course topics:

- Week 1 - Principles of Learning, Prior Knowledge and Knowledge Organization
- Week 2 - Principles of Learning: Practice and Feedback and Motivation
- Week 3 - Learning Objectives
- Week 4 - Assessment
- Week 5 - Inclusive Teaching
- Week 6 - Active Learning
- Week 7 - Lesson Planning and Final Project

Learning Goals:

- Recognize the value of evidence-based, effective instructional practices and materials and how it can inform their teaching.
- Know how to access the literature about teaching, learning and assessment, within a discipline or broadly.
- Begin to design and utilize realistic, well-defined and achievable learning goals.
- Describe assessment techniques and their alignment with particular learning goals.
- Design effective and inclusive instructional materials, courses, learning environments.
- Participate in professionally-focused groups associated with teaching and learning.
- Recognize the diversity in their classrooms and the need to address that diversity in teaching plans.

Grading and assessment: 60% determined through the students’ online assessments, including short written responses and multiple-choice quizzes. 40% will be determined through in-class participating and in-class assignments, including micro-teaching, lesson design, and written teaching plan or philosophy.