

ENGR 3001 (CRN 22704)/BIOSC 3001 (CRN 23848)/CHEM 3001 (CRN 25090)

Preparation for the STEM Classroom:

An Introduction to Evidence-Based STEM Teaching

Days/Time	Tuesdays, 4:00 – 4:50 PM
Credits	1 credit
Location	Benedum Hall, room 320
Facilitators Contact Information	<ul style="list-style-type: none"> • Dr. Mary Besterfield-Sacre, <i>Associate Dean for Academic Affairs – Swanson School of Engineering, Nickolas A. DeCecco Professor, Industrial Engineering, Director, Engineering Education Research Center</i>, 148 Benedum Hall; (412) 624-9836; mbsacre@pitt.edu • Dr. April Dukes, <i>Faculty and Future Faculty Director, Engineering Education Research Center, Pitt-CIRTL Coordinator</i>; (412) 383-6014, B12 Benedum Hall; aprila@pitt.edu • Dr. Sam Donovan, <i>Lecturer, Biological Sciences</i>; 247 Crawford; (412) 624-4825; sdonovan@pitt.edu • Dr. Joseph Grabowski, <i>Associate Professor and Director of Undergraduate Studies, Chemistry</i>; 705 Chevron; (412) 624-8632; joeg@pitt.edu • Dr. Zsuzsa Horvath, <i>Assistant Professor and Director of Faculty Development, Dental Medicine</i>; 380A Salk Hall; zshst2@pitt.edu • Dr. John Radzilowicz, <i>Instructional Designer, Teaching Support, University Center for Teaching and Learning</i>; 834 Alumni Hall; jgradz@pitt.edu • Dr. Bonnie Falcione, <i>Associate Professor University of Pittsburgh School of Pharmacy and School of Medicine; Clinical Pharmacist, Critical Care and Antibiotic Management UPMC Presbyterian Hospital</i>; 3601 Fifth Avenue Falk Medical Building, Suite 5B; FalcioneBA@upmc.edu
Course Description:	<ul style="list-style-type: none"> • Designed for individuals planning for academic careers in the STEM disciplines, this course provides an introduction to the alignment model, evidence-based teaching practices, and general principles of teaching and learning.
Textbook & Readings	<ul style="list-style-type: none"> • <i>How Learning Works: 7 Research-Based Principles for Smart Teaching</i> by Susan Ambrose • <i>Prep for the STEM Classroom</i> YouTube Channel (select videos from CIRTL STEM Teaching Course): https://www.youtube.com/playlist?list=PLJgGu0Z0ByF95e5S6p5X2y0S0C_kOx70I
Course Objectives	<ul style="list-style-type: none"> • Develop core effective teaching practices. • Adopt classroom strategies that align with how students learn. • Understand the instructor’s role in guiding student learning. • Acquire basic tools in designing an effective STEM-based course.
Participation:	<ul style="list-style-type: none"> • Attendance and participation in discussions is highly encouraged. • To receive pass/fail graduate credit and credit toward Pitt-CIRTL certification, a minimum of 9 classes must be attended. • Students receiving letter grades for graduate credit receive additional guidance on the grade requirements for this class.
Assignments	<ul style="list-style-type: none"> • Read <i>How Learning Works</i> prior to class. • Watch CIRTL MOOC videos prior to class. • Participate in class discussions. • Prepare two drafts of a teaching statement and provide two rounds of peer review.

Fall 2019 Course Schedule

Date	Title	Assignments	Speakers
Aug 27	Introduction		April Dukes Mary Besterfield-Sacre
Sept 3	Active Learning and Classroom Assessment Techniques (CATs)	<ul style="list-style-type: none"> How Learning Works: Appendices A, C, & F YouTube Channel: Assessments (4 videos) 	Zsuzsa Horvath
Sept 10	Principle 1: How does students' prior knowledge affect their learning?	<ul style="list-style-type: none"> How Learning Works: Ch 1 YouTube Channel: Principle 1 (4 videos) 	April Dukes
Sept 18	Principle 2: How does the way students organize knowledge affect their learning?	<ul style="list-style-type: none"> How Learning Works: Ch 2 YouTube Channel: Principle 2 (3 videos) 	April Dukes
Sept 24	Principle 3: What factors motivate students to learn?	<ul style="list-style-type: none"> How Learning Works: Ch 3 YouTube Channel: Principle 3 (3 videos) 	Sam Donovan
Oct 1	Principle 5: What kinds of practice and feedback enhance learning?	<ul style="list-style-type: none"> How Learning Works: Ch 5 YouTube Channel: Principle 5 (4 videos) 	Sam Donovan
Oct 8	Principle 4: How do students develop mastery?	<ul style="list-style-type: none"> How Learning Works: Ch 4 YouTube Channel: Principle 4 (3 videos) 	Zsuzsa Horvath
Oct 15	Principle 6: Why do student development and course climate matter for student learning?	<ul style="list-style-type: none"> How Learning Works: Ch 6 YouTube Channel: Principle 6 (4 videos) 	Joe Grabowski
Oct 22	Developing a Teaching Statement	<ul style="list-style-type: none"> TBD 	Bonnie Falcione
Oct 29	Creating an Inclusive Environment	<ul style="list-style-type: none"> 1st draft Teaching Philosophy Statement due online (CourseWeb) 	April Dukes
Nov 5	Principle 7: How do students become self-directed learners?	<ul style="list-style-type: none"> How Learning Works: Ch 7 YouTube Channel: Principle 7 (4 videos) 	Joe Grabowski
Nov 12	Learning Objectives (LOs) and the Alignment model	<ul style="list-style-type: none"> Provide online peer feedback for Teaching Philosophy Statement YouTube Channel: L.O.s and the Alignment Model (4 videos) 	John Radzilowicz (UCTL)
<i>Nov 19</i>	<i>NO CLASS – Have a great Thanksgiving Break!</i>		
Nov 26	Getting started: You've been assigned a class, now what?		April Dukes
Dec 4	Discussion and Review of Teaching Statements	<ul style="list-style-type: none"> 2nd draft Teaching Statement Draft due – bring 3+ copies Peer review of teaching statements in class 	
Dec 10 (Tuesday)	Certification in STEM Teaching Ceremony (Benedum 102)		

* No class on November 19th due to Thanksgiving Break

** **Red dates** are dates April Dukes will be out of town and unable to attend class