

ENGR 3001 (CRN 23214)/BIOSC 3001 (CRN 24489)/CHEM 3001 (CRN 25848)

Preparation for the STEM Classroom:

An Introduction to Evidence-Based STEM Teaching

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| Days/Time | Tuesdays, 4:00 – 4:50 PM |
| Credits | 1 credit |
| Location | Benedum Hall, room 320 |
| Facilitator 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. Susan Meyer, <i>Director, Pitt Interprofessional Center for Health Careers, Co-director, Pitt Center for Interprofessional Practice and Education, Associate Dean for Education, Professor, Pharmacy and Therapeutics</i>; 5361 Baum Blvd, 8A3; smeyer@pitt.edu |
| Course Description: | 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 Amazon: Hardcover \$37.12/Kindle \$29.59; B&N \$37.12/Nook \$38.49; iTunes \$36.99 • <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"> • Gain knowledge and awareness of effective teaching practices of the STEM classroom • Obtain an awareness of how students learn and understand the STEM instructor’s role in helping students learn in STEM fields • Acquire basic tools in designing a STEM based course |
| Participation: | This course is pass/fail. Attendance and participation in discussions is highly encouraged. |
| Assignments | <ul style="list-style-type: none"> • Participate in class discussions on <i>How Learning Works</i> and CIRTL MOOC videos • Prepare a teaching statement to be reviewed by fellow classmates and faculty |

Fall 2018 Course Schedule

| Date | Title | Description | Speakers |
|---------|----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| Aug 28 | Introduction | <ul style="list-style-type: none"> • What is Pitt-CIRTL? • What to expect from this course • What is a Learning Community? | April Dukes Mary Besterfield-Sacre |
| Sept 4 | 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 11 | 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 18 | 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 |

| Date | Title | Description | Speakers |
|-----------------|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| Sept 25 | 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 2 | Learning Objectives (LOs) and the Alignment model | <ul style="list-style-type: none"> How Learning Works: Appendix D YouTube Channel: L.O.s and the Alignment Model (8 videos) | John Radzilowicz (UCTL) |
| Oct 9 | Developing a Teaching Statement and Portfolio | <ul style="list-style-type: none"> Teaching Statements Teaching Portfolios | Susan Meyer |
| <i>Oct 16</i> | | <ul style="list-style-type: none"> <i>No Class due to Fall Break</i> <i>(Monday classes held on Tuesday)</i> | |
| Oct 23 | 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 30 | 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 |
| Nov 6 | 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 |
| Nov 13 | 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 |
| <i>Nov 20</i> | | <ul style="list-style-type: none"> <i>NO CLASS – Have a great Thanksgiving Break!</i> | |
| Nov 27 | Getting started: You've been assigned a class, now what? | <ul style="list-style-type: none"> Syllabus construction Logistics of preparing for a course | April Dukes |
| Dec 4 | Discussion and Review of Teaching Statements | <ul style="list-style-type: none"> Teaching Statement Draft Due – bring 3+ copies Peer review of teaching statements | |
| Dec 10 (Monday) | Certification in STEM Teaching Ceremony (Benedum 102) | | |

* No class on October 16th due to Fall Break on October 19th

** No class on November 20th due to Thanksgiving Break