

Engineering Professional Development 690

**Diversity in the College Classroom
Spring 2008**

Course Information Packet



**Engineering Professional Development 690
Diversity in the College Classroom (Spring 2008)**

General Course Information

1 credit

January 28 to March 10, 2008, University of Wisconsin-Madison

Course meets: Mondays 9:00-11:00, Science House*, 1645 Linden Drive

**This class is scheduled in a space that is not accessible to wheelchairs. If you require wheelchair accessibility, please let us know and we will change the class location before our first meeting.*

Course instructors:

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Course website:

<http://my.wisc.edu> under the “Academic” tab OR <https://uwmad.courses.wisconsin.edu>;
login with your UW ID and password.

Course email:

epd690-12-s08-agg@lists.wisc.edu

Contact information for supporting programs:

The Delta Program in Research, Teaching, and Learning

<http://www.delta.wisc.edu>

info@delta.wisc.edu

Engineering Professional Development 690 Diversity in the College Classroom (Spring 2008)

Course overview:

The purpose of this course is to explore what is known and theorized about the ways that diversity affects learning and, in turn, help educators develop practical classroom strategies that address diversity. The course is designed for science, technology, engineering, and math (STEM) and social, behavioral, and economic sciences (SBE) educators who are interested in considering diversity issues in their teaching. We will examine how scientists and engineers define diversity and for what purposes, and discuss the ways different definitions of diversity might influence what and how we teach our scientific disciplines. We will consider the possibility that our definition might affect both *how* and *what* we teach.

This year, we will be approaching the course with an eye toward developing an online version of the course to be offered across multiple institutions in the 2008-09 academic year. The structure and format of this semester will largely remain the same, though discussions of how to translate some of the course activities to an online format will occasionally come up.

Course objectives:

When you leave this course, you will have constructed:

- a personally meaningful definition of “diversity”;
- knowledge of some of the fundamental literature on diversity that pertains to the STEM and SBE disciplines;
- a rationale for why you include the content you do in your teaching, and an understanding of how the selection of this content is influenced by your definition of diversity;
- a toolbox of tips and ideas on how you might address diversity in future courses you might teach;
- a community of peers who are a resource for your teaching career;
- knowledge of theory and data you can use to support claims about the benefits and challenges of addressing/embracing diversity in education.

Accessibility:

If you are a person with special circumstances that you believe will affect your class performance (for example, visual, hearing, or learning disabilities, or language differences), please let us know how we can make appropriate accommodations. Also, this class is scheduled in a space that is not accessible to wheelchairs. If you require wheelchair accessibility, please let us know and we will change the class location before our first meeting.

Course structure:

We have designed a two-credit, two-module sequence for the investigation of diversity in the college classroom. Students may participate either in only the first 7-week module for one credit, or both for two credits. This course is the first of these modules, and is focused on reading the literature on diversity in STEM and SBE university-level teaching, with class time mainly dedicated to in-depth discussions and activities. This course was originally developed as a collaboration between members of the Wisconsin Program for Scientific Teaching (Jo Handelsman, Sarah Miller and Chris Pfund), and the Delta Program in Research, Teaching and Learning (Alice Pawley and Chris Pfund). We encourage you to find out more about these programs from their websites:

Engineering Professional Development 690 Diversity in the College Classroom (Spring 2008)

WPST: <http://scientificteaching.wisc.edu/>

Delta: <http://www.delta.wisc.edu/>

This course follows four themes:

Foundation. Foundational knowledge on the topic of diversity and its particular application within STEM and SBE educational contexts. What do people mean when they use the word “diversity”? In what contexts is it used? What are some of your ideas about why it is used in these contexts?

Research on bias. Experimental and analytical work on bias, prejudice, and assumption. How do aspects of diversity affect the judgments we make about people and their work? This theme will form a basis for developing self-awareness and reflection on the biases and assumptions we bring to subsequent course material.

Ways of knowing, ways of learning. Theoretical work on diversity in education has often used the theme of “ways of knowing”, to describe the different research traditions and cultural traditions that people use to make sense of their worlds. Experimental work examines “ways of learning” – practices that promote learning of diverse groups of people. How do we reconcile the ideas of these disciplines with the research on bias? How do we extrapolate from research showing group differences without imposing a new set of stereotypes and prejudices?

Action: where now from here?

As teachers, we hold power. How does our understanding of diversity inform our use of that power? We study what others have done and brainstorm collectively and individually about ways to address diversity in our own teaching of science.

In the second module (March 24 to May 5) students will develop projects in a rigorous, peer-reviewed context. These projects may be based on the proposals developed in the “Action” section of the first module and may consist of instructional materials, course proposals or syllabi, grant proposals, instructional videos, websites, the diversity focus of a Delta internship proposal, or other projects focused around diversity in science and engineering teaching.

Student Assessment:

This course, as a graduate-level and optional course, will be graded based on a contract. In registering for this course, you are entering a simple contract with us as the instructors. If you attend all the classes, participate in class discussions (both in person and online), and submit a good faith effort on the assignments that we describe below, you will receive an A for your course grade. Each uncompensated absence (see below) or missed assignment will result in lowering one grade level (i.e., A to AB, AB to B, etc.).

We understand that you may have responsibilities outside of class (professional meetings, sick children or partners, time-inflexible employers, etc.) that may cause you occasionally to miss class. We ask that you email us as soon as you know that you will miss class, and when you

Engineering Professional Development 690
Diversity in the College Classroom (Spring 2008)

return to class, propose make-up work to compensate for your absence from class. As we will all miss the benefit of your insights when you are absent, we request that your make-up work be something that contributes to learning of the class. Please discuss your ideas with us between the missed class and the subsequent class meeting.

Expected assignments (extended details for each assignment will be given in class):

1. *Reading Assessment*
Everyone is expected to do all of the readings for each class session. For each class session, one team of students will be assigned the job of developing a reading assessment activity that they will lead at the beginning of class. The reading assessment may be a quiz, a puzzle, or a short problem to solve that is based on the reading. Reading assessments should take no longer than 10 minutes and should assess understanding of the key points of the “lead reading” for that day (designated on the syllabus).
2. *Multicultural Immersion Experience*
Experiencing the practices of another culture is one of the best ways to broaden your perspective about a culture other than your own. For this assignment, we ask you to participate in a cultural experience and observe the practices of others. Based on your observations, write a 1-2 page reflection about your experience and how that experience impacts the view you have of students in a classroom.
3. *Classroom Observation*
One of the most effective ways to improve your own teaching and learning practice is to observe the practices of others. Based on your observations of the students and the teacher in a given classroom, you can think about what worked, what didn’t, what was missing, and how you might teach a similar topic or in a similar context in the future. For this assignment, we ask you to observe a class being taught in your discipline and write a 1-2 page reflection of your experience.
4. *Teaching Philosophy: The Diversity Component (2 drafts)*
Applications for teaching positions often include a teaching statement or philosophy. Develop *part of* your teaching philosophy that directly incorporates the concept of diversity. You may choose to create one paragraph on diversity to include in your overall philosophy or you may create an entire teaching philosophy with diversity infused throughout.
5. *Action Plan (1 draft, 2-5 pages)*
We would like you to leave this course with an articulated “action plan”. This can be either an immediate plan for what you would like to do for your participation in the second module of this course series, or, for those not going on, something you’d like to do later in your career.
6. *Course evaluation*
This course is experimental in that it is part of a larger research project for the Delta program. Because we hope to revise and improve the course for future offerings, you

Engineering Professional Development 690
Diversity in the College Classroom (Spring 2008)

will be required to complete a course assessment at the end of the course. The evaluations will be conducted electronically and anonymously, but the person conducting the evaluation (not the instructors) will keep track of who has submitted an evaluation, so that the completion of the evaluation can be part of your grade.

**Engineering Professional Development 690
Diversity in the College Classroom (Spring 2008)**

Course Schedule

Week	Date	Topic	Readings	Assignment due
Foundation				
1	Jan 28	Diversity defined	Chan, 2001 Handelsman et al, 2006 - Chpt 4	Teaching statement-1 st draft
2	Feb 4	Value and challenges of diversity	Nemeth, 1985 Obama, 2005	
3	Feb 11	Unconscious bias, prejudice, and stereotype threat	Steele & Aronson, 1995 Trix & Psenka, 2003	Cultural Immersion Reflection
Ways of Knowing, Ways of Learning...				
4	Feb 18	Universal design and accessibility	Burgstahler, 2007 (http://www.washington.edu/doi/Faculty/Strategies/Universal/)	
5	Feb 25	Biology, learning styles, gender, and pedagogy	Handelsman et al, 2006 - Chpt 2 Angier & Chang, 2005	Classroom observation and reflection
6	Mar 3	Race, culture, class and pedagogy	Little Soldier, 1989 Knapp & Woolverton, 1995	Teaching statement -2 nd draft
From Ideas to Action				
7	Mar 10	Participant action plans	Riley, 2003 Middlecamp, 2006	Action plan

Texts:

All readings will be available electronically from the course website. The readings that we request you to do in advance of each class are the following:

Angier, Natalie and Kenneth Chang. 2005. "Gray Matter and the Sexes: Still a Scientific Gray Area." Pp. 1 in *New York Times*. New York.

Burgstahler, S., 2007. "Universal Design of Instruction", (Adapted from the publication *Universal Design of Instruction: Definition, Principles, and Examples*).
<http://www.washington.edu/doi/Faculty/Strategies/Universal/>

Chan, Sucheng. 2001. "You're short, besides!" in *Race, class and gender: an anthology*, edited by M. L. Andersen and P. Hill Collins. Belmont, CA: Wadsworth.

Handelsman, J., Miller, S., & Pfund, C. 2007. *Scientific teaching*. New York: Freeman. Pp.23-45 and pp 65-82.

Knapp, Michael S. and Sara Woolverton. 1995. "Social class and schooling." Pp. 548-569 in *Handbook of research on multicultural education*, edited by J. A. Banks and C. A. M. Banks. New York: Simon & Schuster Macmillan.

Little Soldier, Lee 1989. "Cooperative learning and the Native American student." *Phi Delta*

Engineering Professional Development 690 Diversity in the College Classroom (Spring 2008)

- Kappan*, October, pp. 161-163.
- Middlecamp, Cathy. 2006. "Diversity in the Physical Science Curriculum: The Intellectual Challenge." In *Handbook for College Science Teaching: Theory, Research, and Practice*. edited by National Science Teachers Association
- Nemeth, Charlan Jeanne. 1985. "Dissent, group process, and creativity: the contribution of minority influence." *Advances in group processes* 2:57-75.
- Obama, Barack. 2006. *The Audacity of Hope*. Crown Publishers, New York. pp. 227-269.
- Riley, Donna. 2003. "Employing liberative pedagogies in engineering education." *Journal of Women and Minorities in Science and Engineering* 9:137-158.
- Steele, Claude M. and Joshua Aronson. 1995. "Stereotype threat and the intellectual test performance of African Americans." *Journal of personality and social psychology* 69:797-811.
- Trix, Frances and Carolyn Psenka. 2003. "Exploring the color of glass: letters of recommendation for female and male medical faculty." *Disclosure & Society* 14: 191-220.

We will post additional references each week that may be of interest to you to peruse at your leisure. In addition, as you progress through this module and come across other readings and books that might be of interest to the class, please email the reference to us and we will keep a list for the benefit of the class.

Giving and receiving feedback

You will benefit if you receive clear and constructive feedback about your teaching practice. This requires an open and caring atmosphere in which your fellow participants feel comfortable enough to offer honest feedback, motivated by your willingness to receive it. Feedback provides you with information about how you affect others and how well your behavior and activities match your intentions; it helps you identify your strengths and areas for improvement.

Giving constructive feedback

Constructive feedback is descriptive rather than evaluative. By describing one's own reaction and avoiding evaluative language, the individual receiving feedback is less likely to react defensively. Constructive feedback has the following characteristics:

1. It is specific rather than general.
2. It considers the needs of the receiver and giver.
3. It is directed toward behavior that the receiver can change. Frustration is generated when a person is reminded of a shortcoming s/he cannot control.
4. It is solicited rather than imposed. Feedback is most useful when the receiver has a question the observers can answer.
5. It is given immediately after the event.
6. It is checked to ensure clear communication. Have the receiver rephrase the feedback.

Both giver and receiver can check with others on the accuracy of the feedback; is this one person's impression or a shared impression?

Engineering Professional Development 690
Diversity in the College Classroom (Spring 2008)

Feedback Basics

Recommended <i>(focus on the giver's perception, specific)</i>	Not Recommended <i>(judgmental, general)</i>
I was confused when you explained...	Your explanation was confusing.
It would help me understand better if you could pause longer between introducing major concepts.	Your lecture went too fast.
It would help if you didn't stand behind the high podium.	You are too short to be seen.
It would help if you make more eye contact during the class and ...	It felt unfriendly and cold when you taught.