CSE599: Teaching Methods in Computer Science

Today: CSE 4140
Usually: CSE 1202
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http://cseweb.ucsd.edu/~minnes/cse599/
Expect Today...

• Why take this course
  - What will you do and gain

• Logistics
  - Web Site, Meetings, Assessment

• TA: role & expectations

• Debrief pre-survey results

• Practicum: simulated office hours
What are the goals of this class?
Syllabus and Learning Goals

• Syllabus
  - Welcome
  - What does this class offer to me?
  - How, exactly, am I going to accomplish this?
  - How will I (and the professor) know if I am making progress in my learning?

• Learning Goals:
  - By the end of this course you will be able to...
Learning Goals: CSE 599

1. Describe the basic roles and responsibilities of TAs at UC San Diego and how one should use these to discuss expectations with the professor.
2. Implement strategies for effective time-management when working within a team.
3. Develop, describe, and implement a discussion section activity to support student-centric learning.
4. Describe at least 3 ways to “find out what students don’t know” (e.g., for guiding discussion section or lecture planning).
5. Describe a specific lecture/discussion activity or homework assignment for a computing course that engages students in metacognitive assessment.
6. Write lecture-level learning goals for a course that are clear and assessable.
7. Put to practice at least 2 techniques for engaging students in discussion section.
8. Explain the meaning of “stereotype threat” and be aware of possible biases.
9. Implement techniques for creating inclusive discussion groups.
10. Provide examples of formative and summative assessments in a specific computing course and their value for students and instructors
11. Create a rubric to support the efficient and replicable grading of a homework assignment in a specific computing course
12. Observe and critique someone else’s lecture with regard to student learning. Put into practice core boardwork, organizational, and speaking practices to support effective explanations of computing topics.
13. Speak succinctly, effectively, and engagingly on a technical computing topic.
Goals for CSE 599

• This course is about theory and practice
  - Theory comes first, right?

• Practice First? How will that work...
  - You likely want help now on:
    • Leading discussion, faculty expectations, grading, Office Hours, UCSD
  - And your involvement in practice will help recognize the value in theory
Theory and Practice

• UCSD specifics for TAs
  - Discussion Sections
  - Grading
  - Sources of Help and Advice
  - Balancing Time / Instructor Personalities

• Basic issues surrounding computer science education (and education in general)
  - How do people learn?
  - “The lecture” (also, “The talk”)
  - Assessment
  - Computer Science Education Research
What is going to happen in this class

• **To Prepare (generally):**
  - Read class website for resources and class requirements
  - Do an activity:
    • Participate and reflect in an online discussion forum or survey
    • Practice a technique
    • Observe a class
  - Sometimes: Prepare a discussion section or read an article

• **Weekly (generally):**
  - “Lecture” 2-2:45 in 1202
  - Discussion Section Practicum: 2:50-3:20 in breakout groups (basement, conference rooms)

• All information on class website

  http://cseweb.ucsd.edu/~minnes/cse599/
OK, but how will I be graded?

• All participation, practicum and preparation (discussion forum) receive 0, 1, or 2 (or 3) points. If you do the work reasonably well, you’ll get 2 points.

• To pass the class you need to:
  - Complete each of (1) Student contract, (2) Pre-class survey, and (3) final survey
  - For your attendance (out of 8 meetings)
    • Receive no more than one 0
    • Receive at least 6 scores of 2
  - Actively participate in all 7 practicum sessions
    • Each group reports participation via Weekly Practicum Reflection
  - For your class preparation
    • Receive no more than one score of 0
    • Receive at least 6 scores of 2 or above
Introduction
Master TA: Dorothy Yen

• Coming soon!
Who Am I?

• Mia Minnes
  - PhD Cornell (2008)
  - Postdoc MIT (2008-2010)
  - Assistant Teaching Professor (here)

• CS / Math Research
  - Theory, Computability, Math Logic

• Programs at UC San Diego
  - Summer Internship Symposium (today!)
  - SPIS / Summer Academy
  - Coursera MOOC
Pre-class survey

Drum-roll, please ...
Who are you?

- Introduce yourself to person next to you with the following information:
  - Your name
  - What class you are TA'ing
  - What class you’d most like to TA
Who are you? (Cont)

• Now discuss the following with the people sitting around you:
  
  - What are you most looking forward to about being a TA?
  
  - What are you most afraid/apprehensive of about your role as a TA?
Who are you? (Cont)

• What did you choose to explain in your video?
• What was surprising to you about making the video?
• What did you like most about your video?
• How will you use this experience when you prepare for discussion sections?
What makes a good/bad teacher?

• Take a few moments to think about your answers to the following questions:
  
  - What are the characteristics of “good” teaching? Think of examples from your own experience.
  
  - What are characteristics of “bad” teaching? Again, think of specific examples.
  
  - What are the similarities and differences between teaching and professional presentations?

Think. Pair. Share.
TA Roles

• Consider the TA roles you were handed.
• As a group, brainstorm
  – Questions you have about this role
  – Strategies for success
  – Potential pitfalls
Techniques

Pair activity

Whiteboards

Cold calling

Think-pair-share

Groupwork
Homework for Next Time:

• Weekly: Check class website for assignment

• Assignments
  - Reading assignment this week: evaluations
  - Outline for practicum assignment posted on Piazza
  - Practicum assignment, prepare a 3-4 minute talk