TA1

CETL 8000 - CoC Syllabus

TA1- Fall 2013

Coordinator:

Mark Guzdial
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Course Details:

Monday. 2:05 pm - 2:55 pm. Room: 101 College of Computing Building

Course Website:

T-Square: https://t-square.gatech.edu/

Course Description:

This course serves as an introduction to teaching for College of Computing graduate students who will serve as teaching assistants. We will focus on developing students as effective computer science teachers and preparing students for an academic career with professional development.

Course Modules:

A student's effort in this course will be divided among four modules:

- *Module 1: The Logistics of Being a CoC Teaching Assistant*
  - Students will become familiar with the important Georgia Tech and CoC resources and policies for teaching assistants and understand the requirements and expectations (both explicit and implicit) of a CoC teaching assistant.
- *Module 2: Your Role as a Computer Science Teacher*
  - Students will identify instructional methods necessary for computer science teachers.
  - Students will be able to describe transferrable skills required for teaching and learning.
- *Module 3: Professional Development*: Students will understand how to plan a career balancing research, teaching, and service.
- *Module 4: Teaching*
  - Students will formulate teaching plans using skills and techniques gained in modules 1-2.
  - Students will formulate microteaching exercises.

Course Requirements:

To Pass

- Participate in class activities.
- Complete assignments.
- Attend class:
  - You are permitted two unexcused absences.

- If you are going to be absent, please let the instructor know in advance.

Essay Assignments:

I'm looking for 2-4 pages, well-written, typed, not tiny font.

1. Week 2: Due Aug 26: Essay #1:**What's your best learning experience?** How do you learn? How did you know that you learned? What did you learn?
2. Week 4: Due Sept 16: Essay #2: **Reflection on being a TA**. What has been your experience as a TA? How is it different or similar to what you heard on the TA panel?
3. Week 6: Due Sept 30: Essay #3:**What do we know about teaching CS**? Take any one of the researchers discussed in Week 5. Read a biography of them and one paper by them *not* already assigned in class. Write a summary of what s/he tells us about teaching CS.
4. Week 8: Due Oct 14: **A micro-teaching lesson plan**: Using one or methods discussed in weeks 6-7, how would you teach something in 10 minutes? Come up with a plan for doing that.
5. Week 12-14: **Micro-teaching.**
6. Week 15: Due Dec 2: **Reflection**. **What's so hard about teaching?** You are finishing your first semester of being a TA. What was hard about teaching? What could you do better next time?

In Class Cell Phone and Laptop Policy:

Simple: Put them away. Please be respectful of your classmates and our learning community.

Email:

All emails to the Instructor (and/or Teaching Assistants, if any) should have [CETL 8000 - CoC] in the subject line.

Honor Code

All students are expected to be familiar with the Honor Code (www.honor.gatech.edu) and are bound by its requirements. You must observe the Honor Code with respect to assignments, and all other aspects of this course.

Course Schedule

- ***Part I: Being a TA***
- Week 1: Aug 19: Overview of course
  - Try out two class "ice-breakers"
  - Who are you and what do you hope to get out of this class?
- Week 2: Aug 26: Proctoring, Grading, and Cheating
  - Reading before class: Sections I-III of "Teaching at Georgia Tech for 2013"
  - Peer instruction quiz in class on these topics, with discussion (Will provide a set of clickers.)
  - Essay #1: Due by 11 pm.
- Week 3: Sept. 9: Experienced CoC TA Panel Section IV of "Teaching at Georgia Tech"
  - Reading before class: Section V of "Teaching at Georgia Tech for 2013"
  - Panel of TA's will respond to questions:
    - What is the hardest part of being a TA?
    - What is the most fun part of being a TA?

    - What do you wish someone told you before you started being a TA?
- ***Part II: Being a Computer Science Teacher***
- Week 4: Sept. 16: How learning works
    - Reading before class: Read Chapter 1 of "How People Learn"
    - Overview of how people learn, why active learning is important, what the role of the teacher is in learning.
    - Essay #2: Due by 11 pm.
- Week 5: Sept. 23: How learning works in computer science
    - Reading: TBD
    - History of teaching CS: From Basic and Logo, to Pascal, C++, and Java
    - History of studying learning in CS: Papert, Pea, diSessa, Soloway, Anderson, Petre, Simon, Caspersen, Hundhausen, McCracken, Lister, Tew, Dorn
    - What makes learning CS hard?
- Week 6: Sept 30: Teaching methods in computer science, Part 1
    - Reading: "Success in Introductory Programming: What works?"
    - Live Coding
    - Pair Programming
    - Peer Instruction
    - Essay #3: Due by 11 pm.
- Week 7: Oct 7: Teaching methods in computer science, Part 2
    - Reading: TBD
    - Kinesthetic Learning Activities
    - Worked Examples
    - Using gesture and diagram
- Week 8: Oct 14: Teaching for Diversity in Computer Science
    - Reading: "A practical guide to gender diversity for CS faculty", Chapters 2-4
    - What is stereotype threat, and how to address it
    - The importance of encouragement and belonging
    - Essay #4 (Micro-teaching lesson plan): Due by 11 pm.
- Week 9: Oct 21: Assessment
    - Developing good rubrics
    - Developing good multiple choice questions (MCQs)
    - Validation
- ***Part III: Professional Development***
- Week 10: Oct 28: The PhD Timeline
    - Reading: Handout on T-Square
- Week 11: Nov 4: Balancing teaching and research (and service and…oh yeah, life!)
- ***Part IV: Microteaching***

  Each student will present his or her lesson for 10 minutes, followed by 10-15 minutes of discus-

sion. **Every** student will present. **Every** student will complete a feedback form on every *other* student. These sessions are mandatory for everyone.

- Week 12: Nov. 11: Microteaching
- Week 13: Nov. 18: Microteaching
- Week 14: Nov 25: Microteaching
- ***Week 15: Dec. 2: Reflection***
  - Essay #5: Due by 11 pm.