Teaching Your First Course

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Jodi Tims (she/her)

• My path
  • BS, Math - UPJ
  • MS, PhD, Asst/Assoc Professor - Pitt
  • Associate Professor - Saint Francis University
  • Associate/Full Professor and Chair - Baldwin Wallace University
  • Professor of the Practice and Associate Dean of Network Programs - Northeastern University
Susan Rodger

• My path

  • BS Math/CS NCSU
  • MS, PhD Purdue University
  • Rensselaer Poly. Inst. – Assistant Professor
  • Duke University – Professor of the Practice (Pop)
    • (Assistant Pop, Associate Pop, Pop)
  • Research – CS Education, Visualization, Tools learning CS, integrating computing into K12
  • Talk about my autism: https://bit.ly/rodgersigcse23
Susan Rodger

• Fun - run/swim/hike, baking, cats, writing Wikipedia pages
Outline

• Transitioning to faculty teaching
• Finding resources
• Creating a syllabus
• Designing lecture
• Designing assignments
• Designing homework and exams
• Soliciting feedback
• Responding to student challenges
• Dealing with grading and plagiarism
• Recruiting TAs
• Managing TAs
• Planning your first day
• Preparing for faculty teaching
Your Experience

How many of you are close to finishing your degree?
How many of you have been a Teaching Assistant?
How many of you have taught your own course (been the instructor of record)?
Transitioning to faculty teaching

- Decide on a pedagogy (lecture, active learning, flipped)
- Plan the flow of the course and course policies
  - Will there be exams? How many? In-class vs. take home
  - Number of assignments and quizzes along with dates due/given (aim for a consistent schedule)
  - Will late submissions be allowed? Will resubmissions be permitted?
- Develop curriculum
  - Determine learning objectives: conceptual material and skills
  - Select textbook(s) and other resources to use
  - Create course materials (lectures, in-class activities, assignments, quizzes, exams)
- Manage teaching assistants and graders
  - Develop student engagement plan (office hours, lab assistance, tutoring)
  - Set criteria and deadlines for grading and oversee quality
- Handle administrative tasks
  - Order books
  - Manage student enrollment
  - Report struggling students to college
  - Determine final grades
Finding resources

• Look for courses/syllabi at similar institutions
  • Email the instructor for anything they are willing to share
• Post on SIGCSE to request materials
  • SIGCSE-members@listserv.acm.org
• Look for a book that covers the course content
  • Publishers will often send you the book and slides
• Look for “peer-instruction” slides
  • peerinstruction4cs.org/
• Look for individual assignments to integrate
  • nifty.stanford.edu
  • engage-csedu.org
  • acm.org/education/CS2013-final-report.pdf
• Use tools to check for cheating on programming assignments
  • https://theory.stanford.edu/~aiken/moss/
Creating a syllabus

• Copy someone’s syllabus
  • Find required statements for accommodations, late policy, sick form, academic resource center, counseling center, cheating, etc.
  • Large course? Use google forms to collect responses:
    • requesting extension, reschedule an exam, regrade request, etc
• Map out everything
  • List of topics, exam dates, list of assignments and due dates, ...
• Copy someone’s course materials
  • You are not the first person to teach this content!
    • You can make small changes to catch or reduce cheating
  • For later courses, use “Backward Course Design” ([link](#))
• Create a reading list for a graduate course
  • Pull from courses you took and articles you reference
Designing Lecture

• How to engage your students
  • Don't put all your notes on your slides
    • Make a slide, then copy it and add answers to show in class
    • Delete slides with answers before putting up .pdf of lecture slides
    • Put up full notes after class, remove at end of semester
  • Ask questions to make them think, wait for an answer
    • It is tempting to just say the answer
  • Group activities - clickers, google forms
    • Go over collective answer
• Communicating what you value (e.g. class participation)
• Do different examples then are in the book
• Review previous topic, remind where the course is going
Make lecture fun! sorting
Make Lecture fun - automata theory

Turing machine out of blueberry muffins

Students build DFA with cookies and icing
Designing assignments

• Consider low stakes, short assignments/quizzes and higher stakes, longer assignments with checkpoints
• Design questions that help students learn the material
  • Focus on fundamental material and common misunderstandings
  • Create questions that ask students to stretch, but not too much
  • Design for good students, not most experienced students
  • Consider challenge problems
  • Create questions that work for different learning styles
• Do the assignment yourself, have a TA do the assignment
  • Is it too much? Can you give them parts of it?
• Create assignments that are easy to grade
• Coordinate deadlines in common classes
Designing exams

- Be aware of time
  - Students will take longer than you to answer questions
  - Consider how long it will take to grade each question
- Ask questions in manner similar to assignment questions
- Break complex questions into parts
- Create questions at different difficulty levels
- Make sure the questions/instructions are clear
- Have someone else take the exam prior to test day
- You can adjust grades if the overall average is lower than anticipated
Soliciting feedback

• Strategize a way to get valuable information from your teaching evaluations
  • You may prefer to have a TA, colleague, or friend summarize them
  • Don’t dismiss them - they can be biased, but there is usually some truth to be gleaned that can improve your effectiveness
• Be prepared to speak to concerns raised and feedback given
  • Students want to know their feedback is heard
• Consider providing a process for anonymous feedback throughout the course
• Take notes *during* class about feedback and questions
• Have a colleague sit in on your class and provide informal feedback
Responding to student challenges

- Understand reporting requirements
  - First year and athlete progress reports
  - Unsatisfactory progress reports anytime
  - Honor code violations
- Learn about on-campus resources
  - Well-being, financial, and academic resources
- Understand required accommodations
  - Reach out to students with accommodations to establish protocol
  - Create a plan for accommodations and set them up early
- Be aware of progress
  - Keep overall grade spreadsheet and check every few weeks
  - Keep attendance record informally (if size of class allows)
- Reach out to struggling students early
  - Frame outreach as connecting them to resources to help them succeed
  - Provide a seamless way to request extensions
Dealing with grading and plagiarism

• Create clear articulation of what counts as cheating
• Understand student conduct policy
  • Report students – first time offense could be lighter
• Collect evidence – need a strong case
  • With strong evidence they will likely admit it
  • May have to follow through with student court
• ChatGPT complicates things...
  • Compare solutions to ChatGPT solutions
• Ask them questions about their work or give them a similar problem to solve
Recruiting TAs

• Understand how TA placements are determined in your department
• Get student recommendations from colleagues
  • Ask about student’s grasp of material, level of responsibility, and personality
• Reach out to recommended students
• Make sure your TA pool is diverse
  • Students from marginalized populations may be less likely to apply and need encouragement to do so
Managing TAs

- Find or create TA training materials
- Convey the importance of meeting deadlines
- Convey the importance of respectful student interactions
- Design a plan for office hours
  - Ask TAs to fit into that plan and only modify plan very selectively
- Design and share grading deadlines before semester starts
  - Allow more time or assign less work around midterms and breaks
  - Consider scheduling grading sessions
  - Schedule time for you to finish unfinished grading
- Solicit feedback
  - Check in weekly with TAs about attendance and common questions
  - Solicit student feedback with anonymous survey or other mechanism
Planning your first day

- Practice speaking before, with tongue twisters
- Check out the room before
- Greet the class, small talk, smile
- Bring them closer to you, "can't sit in last 6 rows"
- Set expectations - "phone's off", "start and end on time"
- Acknowledge students - ask them to state their name
- Manage show-offy students - "let's chat later on that"
- Ok to say "don't know, will get back to you"
- What will you wear? Comfortable? No small stripes!
Let's say a tongue twister!

Betty Botter bought some butter
But she said the butter’s bitter
If I put it in my batter, it will make my batter bitter
But a bit of better butter will make my batter better
So ‘twas better Betty Botter bought a bit of better butter
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Preparing for faculty teaching

- Sit in on or TA courses that you might eventually teach
- Teach a lecture or co-teach a course
  - Consider teaching at local institutions
- Teach in a summer outreach program or winter terms
- Propose revisions to a course
- Seek out training at a Teaching and Learning Center or the Education Department/Program at your university
- Postdoc jobs with teaching or visiting faculty positions
  - Are you on the SIGCSE listserv?
Questions?