Unlike most other 300-level courses at SEAS, this is a class with a regular meeting time and (usually light) assignments. (The 3xx course number indicates that, as for other teaching practicum courses in FAS, it is not considered appropriate for undergraduates to enroll for course credit.)

Course Objectives

Knowledge: By the end of the course, you will have knowledge of:

- The principles of effective teaching and section leading and their relevance to students' learning and your personal development.
- The application of analytical thinking and reflection to teaching.
- The teaching resources available to you from peers/colleagues, SEAS, the Bok Center and beyond.

Skill: by the end of the course, you will have developed your ability to:

- Prepare a goal-oriented lesson plan tailored to your audience.
- Lead an effective section on a topic in your field, engaging students in interactions and discussions that help them learn beyond lectures and readings.
- Work well with other teachers in a team environment.
- Foster an inclusive and community-based classroom environment as an instructor.
- Find your passion and use it to shape your teaching values and goals.

As a 300-level course, students are expected to complete all assignments. Based on the self-reflection skills you develop in this class, we hope your self-assessment leads you to apply what you learned here to shape your teaching career, professional development, and personal life.

Meeting Time

The course will meet at **Thursdays at 3:45pm starting Jan. 25 in SEC 1.414** according to the schedule given on the course site. We hope to aim to end at or before 6pm most weeks. *Should any student(s) need to isolate due to covid protocols but are otherwise able to engage in the class, we will do our best to teach in a hybrid in-person/online format that week.*

Instructors

- John Girash, PhD, jgirash@seas.harvard.edu [Lecturer in SEAS, and Director of Graduate Education]. SEC 1.01; 617-496-5956. Office hours: Mondays 4-5pm in SEC 1.101 .
- Ashley Cavanagh, acavanagh@g.harvard.edu [SEAS Pedagogy Fellow; G5 in Applied Physics]

We look forward to getting to know you and hope to see you in office hours (regular, or by appointment) through the semester. Office hours and other notices will be posted on the course site.

Assignments

Assignments for this course are designed to help you reflect on your own teaching, and on others'.

- Weekly assignments will largely consist of short readings and video viewings, prep for teaching, and somewhat-longer self-reflections at mid- and end-of-term.
- Each student will be required to review two of their teaching videos with a member of the course staff: once for *Teaching Week II*, and once for *Teaching Week IV* or *V*.
- Students will be expected to give a brief presentation on a topic of cognition or learning theory from one of the optional readings below, with some individual presentations spread throughout the semester if they don't all fit in the allocated class meeting.

Accommodations for students with disabilities

Harvard University values inclusive excellence and providing equal educational opportunities for all students. Our goal is to remove barriers for disabled students related to inaccessible elements of instruction or design in this course. If reasonable accommodations are necessary to provide access, please contact the Disability Access Office (DAO). Accommodations do not alter fundamental requirements of the course and are not retroactive. Students should request accommodations as early as possible, since they may take time to implement. Students should notify DAO at any time during the semester if adjustments to their communicated accommodation plan are needed.

Diversity and Inclusion

In this class we aim to create a learning environment that supports a diversity of thoughts, perspectives and experiences, and honors all participants' identities. The instructors and guests (as are many people) are still in the process of learning about diverse perspectives and identities. If something is said in the class, by anyone, that makes you feel uncomfortable, please speak with John or Ike about it. As a participant in class discussions you should also strive to honor the diversity of your colleagues. -- *adapted from Brown University fall 2017 CS 279 syllabus, Drs. Monica Linden and Mary Wright.*

Reading List

Required readings for all students:

- Derek Bok Center for Teaching and Learning *Hit the Ground Running* Canvas site and Handbook
- NRC (2000) "How Experts Differ from Novices". (Links to an external site.) Chapter 2 in Bransford J.D., Brown A.L., Cocking R.R., eds. *How People Learn: Brain, Mind, Experience, and School*, (pp. 19-38).
- "Inclusion by Design: Survey Your Syllabus and Course Design" worksheet (to be made available)
- other short handouts linked in the online syllabus

Optional readings:

- Susan A. Ambrose et al. *How Learning Works: Seven Research-Based Principles for Smart Teaching* (Links to an external site.). (2010, Jossey-Bass). *[Available online from Hollis.]*
- James E. Zull. *The Art of Changing the Brain: Enriching the Practice of Teaching by Exploring the Biology of Learning.* (Links to an external site.) (2002, Stylus).
- Edward Redish (2002). *Teaching Physics with the Physics Suite* (Links to an external site.), particularly chapters 1-3.

Tentative Schedule

The tentative schedule is listed below. Adjustments will likely be made due to number and fields of students in the class, their specific interests, as well as guest availability etc.

Jan. 25 - Teaching by doing; then reflecting

We begin to look at teaching by teaching. After discussing the purpose of teaching and the role of the teacher, and an exercise about what we can provide for and expect of each other in this class, you will take turns briefly (~3 min.) teaching a topic of your choice outside of your PhD specialty that you think others might not know well -- no prep is required!

Assignment for Feb. 1:

- *Read this handout with public speaking suggestions. Be prepared to talk briefly and informally about some aspect of a research project or academic activity you're working on. We will "workshop" a few of these.*

Feb. 1 - Communication and Teaching

As teachers, how do we connect with our audience? Dr. Pamela Pollock, *Director of Professional Development* at the Bok Center, will lead us in exercises and coaching. This will help us to develop a vocabulary for talking about teaching in specific and descriptive terms. We will follow with an informal discussion on preparing and running the first day of section, and an exercise on developing our own introductions.

Assignment for Feb. 8:

- *Watch the video clip you were mailed the link to. Write down any observations on what the teacher did, what the students did, and how they interacted. Keep in mind that these are descriptions, not judgements.*
- *Read the Introduction (pp, 1-3) and the section titled "Section" (specifically pages 7-17) of the Hit the Ground Running handbook.*
- *Prepare a ~10 minute lesson to teach. Try to make it at least somewhat interactive, and aim it at an intro/undergrad audience if possible.*

Feb. 8 - Teaching Week II

You will do your first (still brief) academic teaching, with a focus on fielding student questions. We will also discuss aspects of lesson planning and structuring a section.

Feb. 15 -- no class

Assignment for Feb. 22:

- *Peruse The Crimson's 2027 class profile and read 2-3 articles from undergrads (e.g. Student Stories or Opinion pieces in The Crimson). Pay attention to the themes of what students are writing: the topics, the perspectives, and the priorities. At the bottom of each article, there is an attribution to the author of the piece. How do College students describe themselves? What language do they use to convey information about themselves to their peers?*
- *Read the section "Who are your students?" (pp. 4-6) of the Hit the Ground Running handbook.*
- *Do a board planning exercise: Pick ~10 minutes of conceptual material to present. Take a sheet of paper and draw an outline of board panels on it. Plan out on the paper exactly what you will put on the board. No short-cuts: when done, the paper should effectively be a photograph of what the board will look like when youâ€™re done. While doing this exercise, make note of important things to say and places to ask questions and interact with the students. Write all of this down, but not in the panels outlining the board. (It could still be on the same sheet of paper, perhaps below each panel.)*
- *Bring 3 copies of your lesson plan to class. We will be going over them in small groups.*

Feb. 22 - Who are your students? An Introduction to Harvard undergraduate life

We will start off with a discussion of life, both academic and overall, of College students, joined by Withrop House faculty dean Prof. Steve Chong and one or two undergraduate students. We will then break into small groups to study each other's board plan (prepared as homework).

Assignment for Feb. 29:

- *Watch the Math 21b video clip in the course Slack "shared materials" channel. Consider the teacher's style both in interacting with the students and in using the board.*
- *Based on the feedback you received, revise your plan from Feb. 15 and come prepared to teach from it.*

Feb. 29 - Teaching Week III: Conceptual Teaching.

Incorporating feedback from the previous workshopping of your board plans, you will teach with your lesson plan, based on a *conceptual* topic.

Assignment for March 21:

- *Browse these short handouts:*
  - *Overview of Bloom's Taxonomy of the Cognitive Domain (Sections 1, 2, and 4 of the blog post)*
  - *Choosing Problems (general tipsheet)*
  - *Guidelines for writing questions (not science-specific; see what you think)*
- *Scope out an idea for a possible example problem based on your lesson of Feb 29, and bring it to class.*

March 21 - Problems and Assignments

A discussion of specific skills of teaching a scientific problem or activity, followed by a workshop on question/problem/assignment design, leading to you developing your problems or activities (as homework) to "assign" to each other next week.

Assignment for March 28:

- *Read the "Grading and Assessing Students" section (pp. 25-28) of the Hit the Ground Running handbook.*
- *Prep a problem- or example-based lesson (target for 15 minutes or less) in support of the homework problem you started developing in class today. Also finish composing your homework problem. Aim for your homework to take your "students" 15 minutes to complete after seeing your in-class lesson.*

March 28 - Teaching Week IVa: Problems and Applications _AND_ Working with faculty, students, other TFs to make a course go well, and discussion of mid-semester feedback

Some of you will teach a problem or example and (perhaps next week) hand out "homework" to each other.

AND

A discussion of teaching at Harvard from the course head's perspective and how TFs and faculty can work

best together in a course. [It is possible this will be delayed until April 4.]

Assignment for April 4:

- *Bring 3 copies of your homework to hand out in class*

April 4 - Teaching Week IVb: Problems and Applications

The remainder of you will teach a problem or example and all will hand out "homework" to each other, to do for next week.

Assignment for April 11:

- *Do each other's homework! (Hmm, that sounds odd, doesn't it?)*
  - *Take at most 30 minutes on each homework!*
- *Read the "Office Hours" (pp. 23-24) and "Getting Feedback" (pp, 29-31) sections of the Hit the Ground Running handbook.*
- *Spend no more than **10 minutes** coming up with a simple rubric for grading your homework.*

April 11 - Homework debrief

Grade each other's homeworks, go over your rubrics, have "office hours" meeting with students to discuss their efforts, and get each other's feedback on what it was like to be a student expected to do the assignments (and to learn from doing so).

Assignment for April 18:

- *Prep a brief non-classroom-based educational presentation. If appropriate for your situation this should be the very brief conference or public outreach talk. Focus on making the talk _short_ and fostering questions.*

April 18 - Teaching Week V: Communicating Your Science

Giving a first outreach, group-meeting, or other presentation can be one of the most stressful tasks for a new graduate student. Using the teaching and feedback vocabulary we've built up so far, you will have the opportunity to practice giving a non-classroom talk, and fielding questions.