

## **How do I put my teaching philosophy into practice?**

### **1. I develop clear and appropriate course objectives, and communicate these to students explicitly.**

I like my course objectives to be easy to understand and easy to find. You can find them on the first page of my syllabus (see the document titled “ForestHealth\_Syllabus”).

### **2. My course objectives drive my course design.**

Each activity has a purpose, and I communicate that to students as well. In NR 782/882 – Forest Health, I identified specific course objectives related to every assignment. I included those objectives in the instructions for each assignment. See the document titled “LTA\_01”.

In the course evaluation, one student reports that “All the assignments were helpful and none of them felt completely unnecessary - I understood what I was gaining from doing each assignment and they definitely helped expand my knowledge of forest health.”

### **3. I bring an exciting energy to the learning environment.**

I find ways to personally connect with my course content and pass that excitement on to my students. I like to get to know my students and what they are interested in, so I can tailor some of our lectures, readings, and activities appropriately. Student feedback confirms that students find my teaching style engaging:

- “. . . lectures are informative, engaging, and entertaining.”
- “The instructor is engaging, fun, and provides a learning space that is more relatable to students rather than spewing out information that is difficult to digest.”
- “Great engagement . . . overall created a very positive environment and experience.”

### **4. I provide frequent and meaningful feedback to students.**

Part of my teaching philosophy is reciprocity. If I expect students to hand in an assignment on time, then they can expect me to evaluate and provide feedback in a timely manner, too. In Forest Health, weekly assignments were due by 11:59pm Friday, and students received feedback by class time on Tuesday. I include a rubric with all assignments so students know how they are being assessed. See the document titled “LTA\_01”.

### **5. I use a variety of learning activities.**

#### **Lecture**

- I create a PowerPoint slideshow for each class meeting to keep us organized. Each slideshow starts with the agenda for the day and I always end with reminders and

pertinent upcoming events. I aim to keep lecture (my speaking to the class) to 20-minute chunks, with a retrieval practice (see below) and an active learning activity interspersed. I see lecture as a time to explicitly share important points with my students. I also use lecture to tell the story of a scientific idea or discovery, with illustrations and details that would be difficult for students to synthesize on their own through readings.

### **Retrieval practice**

- [Retrieval practice](#) is remembering. When we use flashcards or take tests, we need to retrieve information from our brains. The act of retrieval supports long-term learning. So, I incorporated retrieval practice into every lecture. Today's retrieval practice would ask questions about what we learned during our last class. We may answer the questions on our own, or in small groups. I can adjust my lesson plans based on student understanding of important topics.

### **Small group investigations**

- During my lesson planning, when I came to a topic that could be organically split into 3-5 parts, I designed small group investigations. These allow for students to work together to gather information from reputable sources on a topic that they may not yet be familiar with (for example, types of plant chemical defenses). I lecture briefly on the overarching topic, and then students split into groups (in this example, perhaps terpenoids, phenolics, and nitrogenous compounds) The groups get ~15 minutes to read, discuss, organize their findings, and eventually we circle back as a class and each group shares what they found. I prepare slides with the basic facts that students need to know, and provide some visuals while each group shares out. Often, I learn new things from students' investigations!

### **Hands-on field and lab experiences**

- In Field Dendrology, 100% of class time was spent outdoors. We physically interacted with our subject matter: trees and shrubs of New England. This was engaging and allowed for strong community development, as we had some down-time to chat while we walked to different tree species.
- In Forest Health, we spent several labs in the UNH College Woods. One of my favorites (and one that received several mentions in student evaluations) involved setting funnel traps for bark beetles. This is a sampling technique I use in my research, so prior to this lab I had introduced some of my work.

### **Long-term projects and presentations**

- Project-based work allows students to dive into a topic of their choice and apply their knowledge from class. In Forest Health, I assigned 2 related projects.
  - First, students completed a timeline of a forest health issue. In a way, this was a literature review, but students could present their timeline in any modality. Some notable submissions include a coffee table book, pamphlets to give out to the public, and fliers about various forest health issues. Students then

presented their timeline projects at the *Forest Health & History Symposium*, which I organized poster-session style for our class. We had snacks and coffee, and I invited relevant faculty, staff, and grad students. My students got to present their work in a fun, social setting, which helped prepare them for a more formal presentation (described below).

- Then, after learning about a forest health issue, students wrote a short, formal research proposal addressing present questions and working towards future solutions. Students followed specific content and formatting instructions, which I modified from real-world research proposal solicitations. During the last week of class, students presented their research proposals in front of the class. Students in the audience got to practice asking questions at a seminar-style talk.

### Verbal exam

- I do not believe that timed, written exams are the best way to assess student learning. Research supports alternative assessment methods: a [recent study found that verbal exams increased student performance and motivation to learn](#). I had the opportunity to take a verbal final exam during a course in graduate school, and that inspired me to try it with my small, upper-level class. I gave all my students a list of 6 prompts that would be part of their final exam. Students could choose to answer the prompts in one of 3 ways: 1 - an individual verbal exam, 2 - in a small group verbal exam (with a requirement to submit notes they prepared), or 3 - in essay form. All students chose some variety of verbal exam. Students put a lot of thought into their answers, and the ensuing discussions were rich.

## 6. I bring new ideas to the classroom

Part of my draw to teaching is my draw to learning. I like to keep my teaching relevant by incorporating hot topics and new findings, in terms of course content and teaching methods.

**Hot-off-the-press course content:** Just as I was introducing tree defense mechanisms in Forest Health, I came across [a study of fire-damaged redwood trees in California](#) (published that week!). The researchers found that ancient buds, pre-formed under the bark (*a constitutive defense mechanism*), were mobilizing decades-old carbon to fuel new growth. I used this paper to illustrate tree defenses to my students in a relevant way. The paper includes helpful figures that cleared up some student misconceptions about adventitious and pre-formed buds.

**New teaching methods:** When I came down with a bad headcold, I knew I couldn't teach the lecture I had prepped in person, and I wasn't sure if I could speak for more than 20 minutes. I decided to teach my in-person class in an online, asynchronous format that still allowed for student interaction. I was inspired by the [flipped classroom approach](#), in which class time is used for the kinds of problem-solving you might expect in homework

assignments, and the "homework" is watching a recorded lecture. I recorded a brief lecture, pivoted our usual retrieval practice into an online, ungraded quiz, posted a modified learning activity and opened a discussion board for students to share their findings from the activity. I would have preferred observing how the in-class discussion would have unfolded, but this was the next best thing.