

# Random Thoughts . . .

## HOW TO PREPARE NEW COURSES WHILE KEEPING YOUR SANITY

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**T**hink of a two-word phrase for a huge time sink that can effectively keep faculty members from doing the things they want to do.

You can probably come up with several phrases that fit. “Proposal deadline” is an obvious one, as are “curriculum revision,” “safety inspection,” “accreditation visit,” and “No Parking.” (The last one is on the sign posted by the one open space you find on campus minutes before you’re supposed to teach a class, with the small print that says “Reserved for the Deputy Associate Vice Provost for Dry Erase Marker Procurement.”)

But the phrase we have in mind is “new prep”—preparing for and teaching a course you’ve never taught before. This column describes the usual approach, which makes this challenging task almost completely unmanageable, and then proposes a better alternative.

### THREE STEPS TO DISASTER, OR, HOW NOT TO APPROACH A NEW COURSE PREPARATION

1. *Go it alone.* Colleagues may have taught the course in the past and done it very well, but it would be embarrassing to ask them if you can use their materials (syllabi, learning objectives, lecture notes, demonstrations, assignments, tests, etc.), so instead create everything yourself from scratch.
2. *Try to cover everything known about the subject in your lectures and always be prepared to answer any question any student might ever ask.* Assemble all the books and research articles you can find and make your lecture notes a self-contained encyclopedia on the subject.
3. *Don’t bother making up learning objectives or a detailed syllabus—just work things out as you go.* It’s all you can do to stay ahead of the class in

your lectures, so just throw together a syllabus that contains only the course name and textbook, your name and office hours, and the catalog description of the course; invent course policies and procedures on a day-by-day basis; and decide what your learning objectives are when you make up the exams.

Here’s what’s likely to happen if you adopt this plan. You’ll spend an outlandish amount of time on the course—10 hours or more of preparation for every lecture hour. You’ll start neglecting your research and your personal life just to keep up with the course preparation, and if you’re unfortunate enough to have two new preps at once, you may no longer have a personal life to neglect. Your lecture notes will be so long and dense that to cover them you’ll have to lecture at a pace no normal human being could possibly follow; you’ll have no time for interactivity in class; and you’ll end up skimming

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some important material or skipping it altogether. Your policies regarding late homework, absences, missed tests, grading, and cheating will be fuzzy and inconsistent. Without learning objectives to guide the preparation, the course will be incoherent, with lectures covering one body of material, assignments another, and tests yet another. The students' frustration and complaints will mount, and the final course evaluations will look like nothing you'd want to post on your blog.

There's a better way.

## A RATIONAL APPROACH TO NEW COURSE PREPARATION

1. *Start preparing as soon as you know you'll be teaching a particular course.*

Dedicate a paper file folder and a folder on your computer to the course and begin to assemble ideas and instructional materials. While you're teaching the course, continue to file ideas and resources as you come up with them.

2. *Don't reinvent the wheel.*

Identify a colleague who is a good teacher and has taught the course you're preparing to teach, and ask if he/she would be willing to share course materials with you. (Most faculty members would be fine with that request.) In addition, try finding the course on the MIT OpenCourseWare Web site (<<http://ocw.mit.edu>>) and download materials from there. Open courseware may contain visuals, simulations, class activities, and assignments that can add considerably to the quality of a course and would take you months or years to construct from scratch. The first time you teach the course, borrow liberally from the shared materials and note after each class what you want to change in future offerings. Also consider asking TA's to come up with good instructional materials and/or inviting students to do it for extra credit.

3. *Write detailed learning objectives, give them to the students as study guides, and let the objectives guide the construction of lesson plans, assignments, and tests.*

Learning objectives are statements of observable tasks that students should be able to accomplish if they have learned what the instructor wanted them to learn. Felder and Brent recommend giving objectives to students as study guides for tests,<sup>1,2</sup> and show an illustrative study guide for a midterm exam.<sup>3</sup>

Before you start to prepare a section of a course that will be covered on a test, draft a study guide and use it to design lessons (lectures and in-class activities<sup>4</sup>) and assignments that provide instruction and practice in the tasks specified in the objectives. As you get new ideas for things you want to teach, add them to the study guide. One to two weeks before the test, finalize the guide and give it to the students, and then draw

on it to design the test. The course will then be coherent, with mutually compatible lessons, assignments, and assessments. Instead of having to guess what you think is important, the students will clearly understand your expectations, and those with the ability to complete the tasks specified in the objectives will be much more likely to do so on the test. In other words, more of your students will have learned what you wanted them to learn. The objectives will also help you avoid trying to cram everything known about the subject into your lecture notes. If you can't think of anything students might do with content besides memorize and repeat it, consider either dropping that content or cutting down on it in lectures, giving yourself more time to spend on higher-level material.

4. *Get feedback during the course.*

It's always a good idea to monitor how things are going in a class so you can make mid-course corrections, particularly when the course is new. Every so often collect "minute papers," in which the students anonymously hand in brief statements of what they consider to be the main points and muddiest points of the class they just sat through. In addition, have them complete a survey four or five weeks into the semester in which they list the things you're doing that are helping their learning and the things that are hindering it. Look for patterns in the responses to these assessments and make adjustments you consider appropriate, or make a note to do so next time you teach the course.

5. *Do everything you can to minimize new preps early in your career, and especially try to avoid having to deal with several of them at a time.*

Some department heads inconsiderately burden their newest faculty members with one new prep after another. If you find yourself in this position, politely ask your head to consider letting you teach the same course several times before you move on to a new one so that you have adequate time to work on your research. Most department heads want their new faculty to start turning out proposals and papers in their first few years and will be sympathetic to such requests. It might not work, but as Rich's grandmother said when told that chicken soup doesn't cure cancer, it couldn't hurt. □

<sup>1</sup>R.M. Felder and R. Brent, "Objectively speaking," *Chem. Engr. Ed.*, 31(3), 178-179 (1997), <<http://www.ncsu.edu/felder-public/Columns/Objectives.html>>.

<sup>2</sup>R.M. Felder and R. Brent, "How to teach (almost) anyone (almost) anything," *Chem. Engr. Ed.*, 40(3), 173-174 (2006), <<http://www.ncsu.edu/felder-public/Columns/TeachAnything.pdf>>.

<sup>3</sup>R.M. Felder, Study guide for a midterm exam in the stoichiometry course, <<http://www.ncsu.edu/felder-public/cbe205site/studyguides/studyguide2.htm>>.

<sup>4</sup>R.M. Felder and R. Brent, "Learning by doing," *Chem. Engr. Ed.*, 37(4), 282-283 (2003), <<http://www.ncsu.edu/felder-public/Columns/Active.pdf>>.

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