

Postdoc Academic Chat #5

Designing Your First New Course

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1. How to Prepare New Courses While Keeping Your Sanity

The posting below gives some excellent tips on what to do, and not do, when preparing to teach a course for the first time. It is by Richard M. Felder, North Carolina State University, and Rebecca Brent, Education Designs, Inc. It is from Chem. Engr. Education, 41(2), 121?122 (Spring 2007). Reprinted with permission.

Think 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-ten 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 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, and show an illustrative study guide for a midterm exam.

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) 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.

2. 10 tips for teaching your first college class

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Teaching your first college class can be exhilarating, but also intimidating. Like most faculty, I didn't receive much training in graduate school in how to teach or design effective college courses. Over the years, I learned how to get better and also took advantage of the great resources that are available to help college instructors. No matter how well you know the content you're teaching, teaching your first class can be tough for anyone. In today's post, I will share 10 tips for teaching your first college class.

Graduate school does a wonderful job developing disciplinary content knowledge, but a lousy job preparing you to teach your first college class.

Each class and institution is a little bit different, but there are some common strategies that I believe will help anyone teaching a college class for the first time.

1. Talk to your colleagues

One of the best sources of information to help you prepare is talking to other faculty in your department. If you're an adjunct, talk to the department chair or program director that hired you. Many novice instructors fail to match the norms of the program, department, and institution where they are teaching. Ask colleagues about the students that typically enroll in the course including demographics, academic ability, motivation, expectations, and prior content experience. You should also ask about common problems that faculty run into with the class (or similar classes) as well as generally ask advice. The more information that you can gather at the beginning of thinking about the class the better able you will be to anticipate problems and proactively design your course.

2. Ask for copies of old syllabi.

When you're talking with colleagues, ask for copies of syllabi from previous versions of the course as well as an example from other courses. Before I teach any class, I always do a quick internet search for syllabi from other institutions. Old syllabi help you see examples of how other instructors approached the course content, assignments, and course policies. One word of caution, however, is to not feel constrained by other syllabi. You want to use them as a guide and if you're dramatically changing you may want to think through why your course is different, but overall you are the instructor and should decide what is the best way to teach the class. Finally, for faculty teaching as part of a sequential curriculum, you want to make sure that you're covering content that students will need in future courses. It can also be helpful in those cases to get a copy of syllabi from later courses as well.

3. Let your course goals drive your content.

As you begin thinking through your class, you want to develop course goals. These goals will then drive the content that gets included in your course. The readings, class sessions, and assignments should all be geared toward achieving the goals you establish for your course.

4. Less is more.

The biggest mistake that I see when teaching a college class for the first time is trying to include too much material. I believe this probably occurs for a couple of reasons. First, everyone is nervous about running out of material in any given class session. Second, we

love our content and our passion can override our ideas for what is reasonable to include in a course. The reality is that under the best of circumstances students will only remember a few things from each course that they take. Personally, I identify three big ideas that I want students to remember long after they leave my class. I hit these big ideas multiple times throughout the class. I will cover more material, of course, but by focusing and reinforcing my three big ideas I am able to give students content that will last much longer than my course. As I often tell new faculty, we can teach as much content as we like, but if students aren't able to learn and absorb it— what's the point?

5. Design assignments that are rigorous, but reasonable.

I believe in pushing students and sometimes pushing them beyond what they think they can accomplish. This can be a messy process for me and my students, but it ultimately makes them better. I encourage you to design assignments that are rigorous and push your students. However, you also have to put yourself in the role of your students and decide if what you are asking of them is reasonable. For example, I probably can't require them to complete a research paper if our library doesn't have sufficient academic journals available. I also shouldn't assign three assignments all due on the same day. It is also appropriate to consider the life circumstances of your students. If most students work full-time, I should think about an assignment that must be completed during business hours. I may still assign the work and ask them to take a day off, but I should give this some thought and attention before assigning it.

6. Think ahead about grading and providing student feedback.

Part of designing rigorous, but reasonable assignments is making sure that you can provide good student feedback. Obviously, not all assignments and activities require the same level of feedback. However, you should provide students with feedback on their work as this is a fundamental part of the learning process. For your own sanity, estimate how much time it will take to grade student work. Then double your estimate because it always takes longer than we expect. Look ahead on your calendar to your other obligations and consider this when creating deadlines. For example, I might have originally selected November 1 as the due date for a paper, but I'm going to be at a conference from November 1-3. In this case, I will often decide to give students an extra few days to complete their work. For faculty teaching more than one class, you should also compare due dates across classes so you balance out grading between courses to the extent possible. Finally, look ahead to when final grades are due and make sure that you give yourself enough time to get everything graded in order to submit final grades on time. Taking the time to think about scheduling grading on the front end of the semester will save your nights and weekends later in the term.

7. Create course policies.

It is always better to have relevant course policies in place at the beginning of the semester before an issue arises. Looking at the other syllabi you gathered can help you identify the types of policies you likely want to put into place. First, look for the list of required policies that your institution requires (or suggests) be included on all syllabi. These policies likely include items such as a disability policy or a religious observances policy. In addition to some of the more legalistic policies, you will want to consider your

policies on attendance and late student work as these (unfortunately) come into play in almost every class.

8. *Consult your teaching center.*

I'm admittedly biased here since I direct one, but teaching centers can be enormously helpful for teaching your first college class. If your institution has a teaching center, you should consult their website, talk with their staff, and attend their workshops. Just as you have content expertise, these centers have expertise in how to teach and can prove enormously helpful to you.

9. *Prepare for the first day.*

As I've written about **before**, preparing for the first day of class can set you up for a great semester. Too many faculty just use the first day to read the syllabus, cover the assignments, and answer any questions. Instead, follow the tips I outlined in my previous **post** to establish norms and expectations for the semester. This requires a little planning, but will help your class go so much better for the rest of the term.

10. *Organize, organize, organize.*

Especially if you are teaching your first college class in a new faculty role, you should take the extra time to organize. Save your lecture notes, keep good copies of originals, and document lesson plans. Assuming that you will be teaching the class again, it is worth it to take the time to keep your class materials organized for easy retrieval in future semesters. The hours it takes to find a good copy of an article to make copies or design materials needed for a class activity can be saved each time you teach the class again. It does take longer to make sure that you're storing materials and saving notes. However, you will find this investment is tiny compared to the savings in future semesters. If you do nothing else, you must do this!

Good Luck

Teaching your first college class is a fantastic opportunity and I wish you luck. These tips will help you get started and make your semester go well. And just remember, if all else fails, just stand on the desk!

3. Teaching Your First Course

American Physiological Society

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[Where Do I Start?](#)

This is usually the thought that comes to mind when faced with that first course. The best place to start is with your colleagues. Sit down with them and ask a few questions. Find out if the course has been taught before or if it is a new course. If it has been taught before, talk to the other course instructors and ask them how the course was designed and managed in the past. Find out if you are supposed to teach "as it has always been taught" or if there are some issues with previous courses necessitating a change in format. Either way, make your job easier and tap the experience and expertise of your colleagues. If it is a team taught course, meet with the other members of the teaching team ASAP and discuss content, format, course management etc.

If you are teaching a new course for the first time - lucky you. Course design, content, and format are in your capable hands. It can be scary at first but it will be a lot of fun. Be sure that you understand the department's expectations for the course, the preparedness of your student population, and the impact that your course will have on subsequent courses that your students will take. If there are prerequisites for your course, review the text to see what students will know when they enter your class. If there are no prerequisites for your course you may want to give a test of basic knowledge during the first week so that you understand the background and preparation of your students. With this information you can pitch your course at a level that will ensure success.

How Do You Prepare a Course?

Everyone has prepared at least one course by opening a textbook chapter, outlining the important points and then turning the outline in a lecture. What many discover at test time is that the students have a superficial knowledge of the material. They know the facts of the topic but primarily in the context of the text or course. They are slow to relate their knowledge to situations outside of the lecture context and may be unable to use it to predict outcomes or assess a problem.

Consequently, one of the first caveats for preparing a course is to clearly identify the course objectives. What do you want your students to know? Should they know content or facts? How should they be able to manipulate the information that they have learned?

Will you expect them to be able to solve clinical problems, calculate results, predict outcomes? Will they need to acquire skills in the course? Think about questions like these and then format them into a list as your course objectives. Once the list is complete, match your objectives to one or more class sessions or topics. For example, if you want your students to acquire content knowledge, identify the class session in which you present the information or the homework reading assignment (textbook chapters, websites, etc.) that addresses the topic. If you want students to learn to apply their knowledge to clinical problems, data analysis etc., identify class sessions where you give them examples in class or provide them with opportunities to practice working them out with their classmates or on their own. If these ideas won't work for you, there are many other ways to build your learning objectives into the course, such as incorporating them into student projects, homework assignments, study questions, web-based discussion, etc.

For more ideas, search the “Life Science Teaching Resource Community” (www.lifescitrc.org/main/ugradsearch.asp) and “Resources for Effective Pedagogy” (www.lifescitrc.org/main/ugradpedagogy.asp) at the APS website.

Plan your course outline and your classroom presentations around these objectives. Some faculty build from small ideas to big concepts and some do the reverse starting with big concepts and working their way down to the small ideas. Do whatever works best for you but be sure to sketch out a logical progression of ideas before writing the presentation. Collect as many resources for your course as time allows. Gather images from your textbook (many publishers supply image libraries and lecture slides), the internet and even create your own images using a drawing program. Search the web for graphs, animations, case studies, and examples that you can use. Again the APS website, www.lifescitrc.org/main/ugradsearch.asp, is a great resource for many of these. Talk to colleagues about how they taught the course and what they did or used that really worked for them. You may not use all of the resources that you collect but they will give you another perspective of the topic and a toolkit for answering those unexpected questions.

Preparing the Syllabus

After you have finalized your course objectives, you are ready to prepare a syllabus. A syllabus is a contract between the student and the instructor and when a student registers for a course, they agree to comply with the terms of this contract. Within the syllabus the instructor lays out the expectations for the course with respect to learning goals, student behavior, and course grading policy. Typically, learning goals explain what the student should be able to do at the end of the course (e.g., identify 3 mechanisms of..., explain the process..., predict the change in..., determine the validity of the statement...). The syllabus section on student behavior deals with a range of instructor expectations, some as mundane as attendance or cell phones in class and others as crucial as class participation or plagiarism. While these may be unpleasant topics, some preemptive thought and action will make your job easier. Decide before class begins whether or not students can talk in class, eat in class, answer cell phones, leave early or walk in late. Refine your vision of class participation and define your idea of plagiarism. Once you have decided on these parameters, clarify them in your syllabus and talk to your students about them on the first day of class. If students understand that these issues influence the classroom environment and that your goal is to provide the best classroom environment possible, the majority of your students will support your efforts. Finally, the syllabus defines what the instructor will use as a grading scale and the assignments, quizzes, and exams that will be associated with the final course score.

It is important to invest significant time and effort into your syllabus because you must live with it throughout the course. Often, first-time instructors or instructors teaching a course for the first time prepare the "perfect" syllabus only to discover midway through the course that either the students or the instructor cannot live with perfection. As a result, an instructor may consider altering the syllabus. However – a word of caution - if you must deviate from your syllabus, be judicious about it. Traditionally if an instructor deviates from the syllabus, it must benefit the student. For example, if you must reschedule an

exam, it is appropriate to change the date (usually a later date) so that it provides the student with at least as much study time as the originally scheduled day. Also, if you must drop topics from the schedule and eliminate associated assignments, make sure that the lost points do not penalize student grades.

What Should I Teach in My Course? ^[1]What Should I Cover in Class?

These are actually 2 separate questions. You may expect students to know the material in 1000 pages of the text but it is unreasonable to expect that you will discuss all of this during class time. Decide what students need to know at the end of the course and then divide it up between what you can present in class and what you expect students to learn on their own. Don't allow your students become "dependent" learners (Weimer, Maryellen. 2002. *Learner-Centered Teaching, Five Key Changes to Practice*. Jossey-Bass, San Francisco, CA) where they look upon their instructor as the source of all knowledge. Prod them into learning for themselves with challenging and relevant questions (Why don't birds have teeth?) that make them delve into their learning resources (texts, internet, etc.) for answers. Also encourage them to be selective about their learning. Help them recognize that learning everything in the 1000 pages of their textbook is unrealistic for the course and that they might be more successful if they were selective about their learning. Guide them to ask questions and make decisions about their studying. Help them ask themselves questions like, "Does this concept have broad applications outside of this chapter? If, so maybe I should focus on it rather than detailed content knowledge." Encourage them to learn information that will help derive other information by asking questions like "If I learn how the Na/K pump works, will I need to memorize the events associated with hyperkalemia or hypernatremia."

How Do Students Learn?

Many of us attended courses that were taught in a traditional lecture format. By and large that worked. After all, we are successful scientists today. There is some question about the value of this technique. Studies show that classroom lectures are not the most effective way to teach or the most effective way for students to learn. Because of our own experience in the classroom however, most of us feel comfortable with this form of teaching, and might naturally want to use it for the first time in our own courses. If this works for you, use it but take some part of your first course and experiment with alternative teaching strategies like problems-based learning, think-pair-share exercises, etc. For examples of quick and easy ways to teach without lecture, look at the "Life Science Teaching Resource Community" at the APS website (www.lifescitrc.org/main/ugradsearch.asp).

Large class sizes can be intimidating and often instructors feel that lecture is the only option in this situation. However, there are several effective alternative strategies that you could consider. One example is class discussion. While it is difficult to run a single discussion section in a large class, it is quite reasonable to generate productive discussion if you break up the class into groups of 3-5 neighboring students. These students can work as a team for 5 minutes answering a question that you pose. At the end of this time

you can poll the groups for their responses to assess student understanding and misconceptions.

It is important to recognize that all students do not learn the same way; hence it might be wise to try multiple presentation formats in your class session. Some students learn better with pictures, some with written words, some with stories/lectures and some by talking about the topic. Vary your course presentation so that it incorporates all of these formats. You might try introducing a topic with a combination of verbal and written format by lecturing with slides and then follow this up with a discussion of a flow chart, diagram, or linkage map. As a summary you might ask students to explain the answer to a question to the person sitting next to them. In this way you can address multiple learning styles and enhance the successful learning in your classroom.

How Do I Know That My Students Are Learning? Testing and Assessment

Many instructors regard testing and assessment as an unpleasant but necessary task that makes some fraction of the class dissatisfied. However, if used appropriately, testing and assessment can provide valuable feedback for students, enabling them to identify their study targets and ultimately improve their learning and grades. Often an instructor relies on test scores only to tell them if students are learning course material. The problem with this method is that exams occur at the end of the curricular unit and by the time the instructor finds out that students have not learned the material, it is too late to remediate. An alternative to this is to quiz student knowledge frequently throughout the course. These assessments don't need to be labor intensive; simple questions with oral or written answers will do. For example, after a difficult topic in class an instructor can put a question up on the screen with 3-4 answers, one of which is correct and the others which address common confusions or misconceptions associated with the topic. Ask the question and have students raise their hand or write their answers on a card. Their replies should give you a sense of their understanding. If you want to know about their deep understanding of the topic, you could pose a question and ask them to write a short paragraph in response. Share these results with the class and ask students to explain why they chose right or wrong answers. This discussion will allow you to dispel the misconceptions that students might have. Also, use this time as an opportunity to guide students to study targets that promote depth understanding rather than superficial learning or memorization. Finally, evaluate student understanding early and often. It will promote learning and prevent those frustrated, confused students that appear in your office just before the exam.