In the Oceanography Classroom

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PLANNING FOR GENERAL OCEANOGRAPHY: COURSE THOUGHTS

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It seems to me that we are living in the golden age of marine science. Our interdisciplinary field is benefiting from great advances in basic science and applied technology, and our students are bringing to class an unprecedented enthusiasm for things oceanic. We professors find ourselves cheerfully in the middle between a burgeoning body of knowledge and a growing number of citizens eager to know about it. It is the best of times.

More and more students are now selecting marine science classes to fulfill part of their undergraduate science requirements. Chances are good that many readers of this column are anticipating *that most pleasing of academic prospects:* teaching a general education introductory oceanography course. Perhaps the most difficult task facing us is to draw the diverse threads of marine science into some coherent whole. What theme will you choose to unify the class? Will it be environmental issues? Plate tectonics? Origins and ends? The ocean's direct influence on your students? Food and resources? History? A personal research emphasis? Marine economics? Local marine highlights and their explanations? Departmental equipment strengths? Ecology? Whatever route you take, *you will forever influence the students who travel with you.* You *are* the topic for them, and your background and preparation, your choice of topics and depth of coverage, your lecture organization and style, and the daily transmission of your own enthusiasm will serve you well.

Students trying to discover the pause in temperature fall due to the latent heat of fusion. They succeeded!

Before You Begin, A Few Thoughts

- Consider handing out a detailed course outline. This document can mention course objectives, prerequisites (if any), grade and attendance requirements, exam dates and information on make-up tests, reading assignments, required course materials, and all those other things students expect to hear about on the first day. By handing the material to the students in printed form, you can devote all of your time to the ocean, right from the start.

- Take a fresh look at your classroom or lecture hall. *Can every student see and hear?* Do the overhead, video, and 35 mm slide projectors work? Are there sonic distractions from the aerobics jazzercise class next door? Have the same old posters been up for more than a decade?

- Marine science is a visual field. Slides, overheads, videos, films, and *lots* of vigorous arm-waving are completely appropriate. But beware the Curse of PowerPoint: the tendency to spend most of one's time getting the fonts just right, or make the images dance, or to jam too many words on the screen at once. Sadly, the PowerPoint tail usually ends up wagging the informational dog.

- Don't be hesitant to illustrate your lectures and lab presentations with sea stories and personal experiences. (Be careful, though, not to emphasize your personal research interest to the detriment of a balanced overview of the marine sciences.)

- Do your best to remain current in the broad field of marine science. Plan to read *Science* weekly, and visit *Science News* and other popular journals in the library when you have a few free minutes. The Internet is an astonishing treasure trove of marine material (and capable of compressing hours into minutes). Though I've tried my best, textbooks are unable to remain on top of things for long, and your students will appreciate the updates.

- Take ample advantage of local occurrences and news items, even if your lecture hall and laboratory are a long distance from the shore. For instance, the daily satellite weather photo available on the Internet can be extremely useful in teaching air flow and storm behavior.

- Try not to cover everything. There is a finite amount of time available for class presentations and for students to study. My biggest problem is realizing that if I *add* something to my course, I must also *remove* something—there simply is not enough time in a semester or quarter to keep stuffing more and more material into my classes.

Suggestions to Pass Along to Your Students

Most of us believe students know how to benefit from a course or use a textbook—after all, students have been taking classes and using texts for decades. But I have found that a brief discussion of technique can make a great deal of difference. I spend a bit of time covering the following points with my students:

- Begin with a preview. Scout the territory ahead—read the course outline, meet fellow students, flip through the first of the textbook's assigned pages reading only the headings and subheadings. Look at the figures and read captions that catch your attention. See where you're going.

- When the time comes, read your text in small but concentrated doses. Each chapter is written in a sequence and tells a story. The logical progression of ideas is going somewhere, and interlocks with the professor's lectures. Find and follow the organization of the chapter. Stop occasionally to review what you've learned. Flip back and forth to review and preview. Underline a few key ideas, not everything you read!

- Think about the key concepts when you encounter them in lecture and in readings. They're pegs to hang your knowledge on.

- Strive to be actively engaged during lectures and reading sessions. Take clear and concise notes, write marginal notes in your text, underline occasional passages (underlining whole sections is seldom useful), write more questions, draw on the diagrams, check off subjects as you master them, discuss information with fellow students, make flashcards while you read (if you find them helpful), *take advantage your professor, his or her teaching assistants,* and your book! Remember, you've hired them—they work for you.

- Monitor your understanding. If you start at the beginning of a topic you will have little trouble understanding the concepts as they unfold. But if you find yourself at the end of a lecture or at the bottom of a page having only glossed over (rather than understood) the material, stop there and start that part again. Look ahead once again to see where we're going. Remember, students have been here before, and they have mastered this material. So can you.

- Use Internet sites. Search for more information on things that fascinate you. If your textbook or professor or department maintain a website, check it out.

- Don't miss class. Listening to lectures and participating in discussions is crucial to effective learning.

- Budget your time. An hour or two each day spent on this most interesting of subjects is much more effective (and far less agonizing) than frenzied studying the night before an exam.

- Enjoy the journey. Your instructor will be glad to share his or her understanding and appreciation of marine science with you—you have only to ask. Students, instructors, and textbook authors all work together toward a common goal: an appreciation of the beauty and interrelationships a growing understanding of the ocean can provide.

And remember, it really is OK to tell a few stories on that first class day. Tell your students how *you* became interested in your life's work, what oceanic experiences have moved you most deeply, and of your hopes for the future. Introduce yourself, tell about your research interests, and ask a few questions about why your students ended up in an oceanography course. Talk about a research project you or your students are presently undertaking. Don't be afraid to transmit your enthusiasm for your subject. Remember, it is possible for our students to be away from the cell phones for up to an hour, and your excitement in the coursework can be infectious. *Enjoy yourself—it's day one, and a new semester stretches optimistically ahead!*