The EOS-SEI Times
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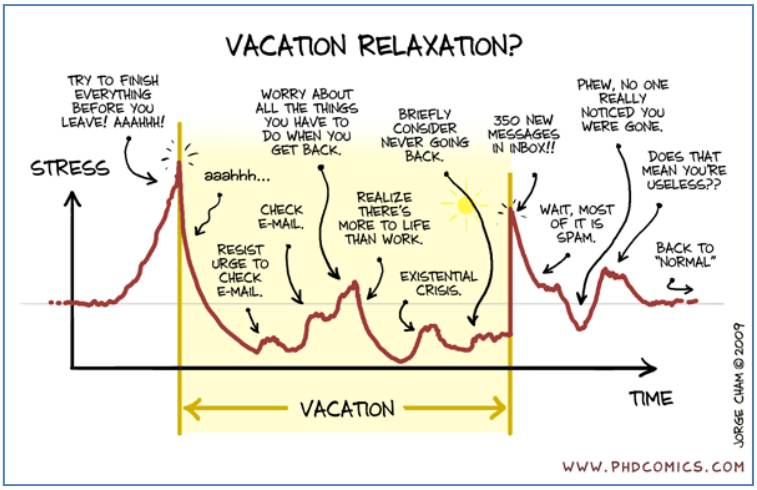
Raising the standards in undergraduate education
http://www.eos.ubc.ca/research/cwsei/eossei-times.html

EOS Course and Education Update: *It's been a busy summer*

Spring / summer 2010 were the busiest seasons of the 5-yr EOS-SEI project. Summaries of current projects are below.

For: …ideas … second opinions … support… or to participate in projects … drop in to EOS-South361 and ask!

Or phone/email any EOS-SEI project staff at http://www.eos.ubc.ca/research/cwsei/people.html



http://www.phdcomics.com/comics/archive.php?comicid=1231

RESOURCES, SUPPORT OPTIONS, AND PLANNED DEPARTMENT-WIDE EVENTS

All faculty: Encourage your graduate students and TAs to take *EOSC 516 – Teaching and Learning in the Earth and Ocean Sciences*. They gain hands-on practice at presentation and teaching, receive excellent feedback, and learn about pedagogy and learning in the Earth and Ocean Sciences. Past participants overwhelmingly rank this as a key component of preparing for their careers, and TA skills and reputations for the whole department will improve.

Reminder of general resources for instructors on website
After more than three years of work, many resources have been produced aimed at helping faculty in their instructing roles. Please see http://www.eos.ubc.ca/research/cwsei/resources.html for a carefully selected set of key resources that will improve the efficiency and effectiveness of your teaching.

If you are new to the department, or new to teaching, you might want to start with THE SHORT TEACHING AND LEARNING GUIDE at: http://www.eos.ubc.ca/research/cwsei/ShortTeachingGuide.pdf

EOS-SEI is developing a **central repository** of all course-specific, and more general project outcomes. This is to be an "internal" EOS webpage so public as well as internally private (to the Department) information can be found easily by staff, faculty and administrators. The collection is at http://www.eos.ubc.ca/internal/cwsei/index.html and a tentative version is already in place.

Plans for geosciences education events in 2010-2011:
We will continue weekly drop-in or special topics sessions this year, to take place Tuesdays 12:30-1:30. ON DAYS WHEN THERE ARE DEPARTMENT MEETINGS WE WILL RESCHEDULE. For drop-ins, visit EOS-South 361. Special topic discussions & presentations will be in EOS-Main 330A. Several experts will be visiting, we will participate in UBC teaching/learning events, and we will be presenting at GSA, AGU, and other geosciences conferences.

CURRENT PROJECTS

All our projects are aimed at (a) understanding how students learn in the geosciences, (b) how things we do affect their learning, and (c) how to efficiently and effectively make decisions about curriculum, student support, course content, and pedagogy**.** Projects currently in progress are:

1. 15 course projects; See our "Long Term Plan" http://www.eos.ubc.ca/research/cwsei/LongTermPlan_26Jan09.pdf .
2. The Student's Attitudes about Earth Science Survey (SAESS) project has been generating data since 2007. One article about the survey has been submitted for publication, one completed undergraduate thesis was inspired partially by SAESS results, and several courses are considering how specific SAESS results relate to course goals and activities. Now, use of SAESS is shifting to a more focused approach in order to address specific questions in particular courses. If you want to discuss ways that you might utilize SAESS results in courses you teach, come see us. For updates and general information see http://www.eos.ubc.ca/research/cwsei/attitude.html .
3. Effects of multiple instructors were studied by surveying 957 students and 17 instructors in 9 courses using 3 teaching models. This work yielded information for helping make good decisions about when and why to use more than one instructor. A report generated for internal departmental use is finished, and an article for publication will be submitted in early September. See http://www.eos.ubc.ca/research/cwsei/mult-instr.html.
4. An investigation of hiring needs and practices of the geosciences industry was completed in spring. The report is at http://www.eos.ubc.ca/research/cwsei/resources/HiringPractices-2010.pdf, and contains information useful to students AND faculty involved in curriculum work, or in advising students about careers.
5. An exit survey of graduating students now has collected two years of results. Data are being analyzed to extract the information that is most useful to faculty, department administration and students.
6. Data on workloads of students (actual hours per week and qualitative comparisons between courses) are now being collected and compiled to inform instructors about how students spend their time.
7. Can the lowest performing students be helped efficiently? The answer is **YES**. EOS and Physics have worked together to demonstrate effective interventions that do not take significant time or energy. A publication is in the works. For a summary presentation, see http://www.cwsei.ubc.ca/Files/EOY/EOY2010/Harris_Deslauriers_Interventions.pdf
8. Another excellent undergraduate honors thesis involving Geoscience Education was completed, this time on landform identification and formation timescales. See Allison Jolley's project summary with links to her thesis at http://www.eos.ubc.ca/research/cwsei/landforms.html .
9. Field school: Important innovations have begun to improve our geology field schools, learn what is most challenging for students, why, and how to support development of these unique skills.
10. "Concept inventories" are descriptions and assessments of key concepts in a particular area of expertise. One example is the "Force Concept Inventory", an assessment of basic Newtonian mechanics concepts, which changed the way physics is taught. We have begun developing concept and skills inventories for mineralogy and petrology, to be used to help monitor development of expertise in students as they progress through our programs.

"I expect you all to be independent, innovative, critical thinkers who will do exactly as I say!"

TO LEARN MORE ABOUT MAKING USE OF ANY OF THIS INFORMATION IN YOUR OWN TEACHING, CONTACT ANY OF THE EOS-SEI PEOPLE: Josh Caulkins, Brett Gilley, Sara Harris, Francis Jones, or Erin Lane. EOS-SEI central is in EOS-South 361.