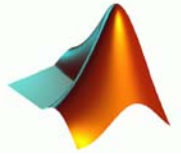


Investigation of student perspectives: focus group set up & findings from EOSC 211 Computer Methods in Earth, Ocean, and Atmospheric Sciences



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1 – Background

EOSC 211 is an introductory MATLAB programming course aimed at students in the Earth sciences, with the aims of (a) teaching them the principles of programming, and (b) providing them with the tools required to analyze data and make good plots in upper level courses. Currently marks are awarded for weekly labs (12), bi-weekly assignments (5), a midterm and a final. We are currently in a planning stage and will teach a modified version of the course in fall 2009.

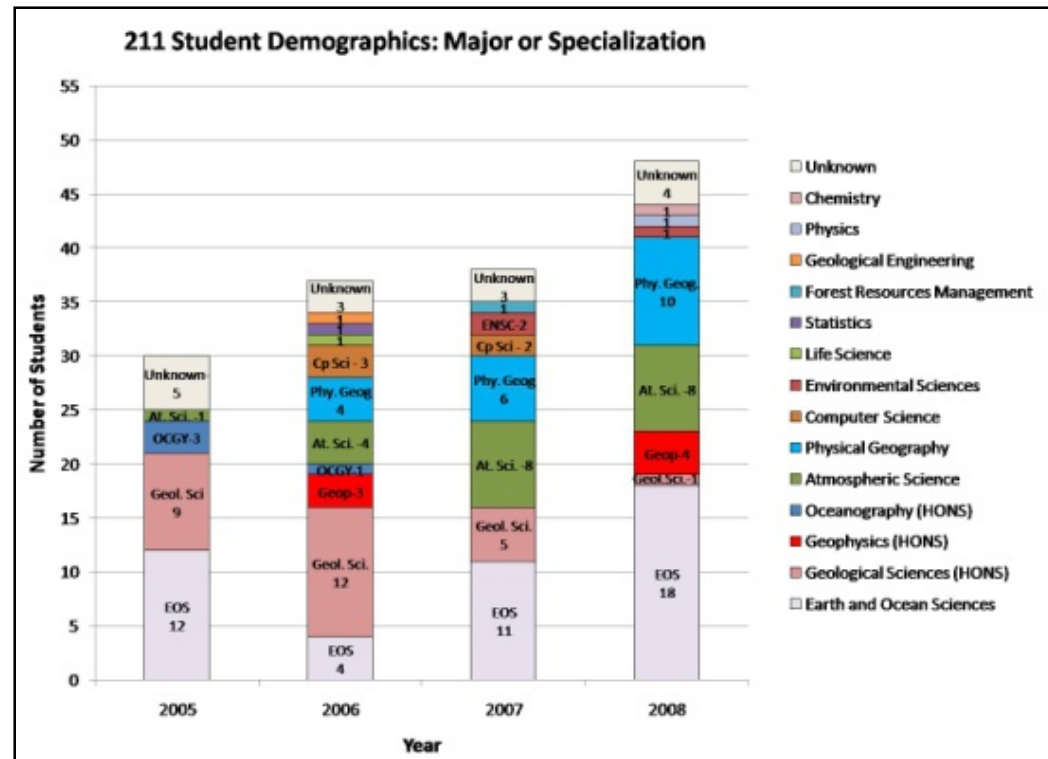
2 – Project

Formalization and revision of:

- Course mandate and purpose in EOSC curriculum,
- Course and module-level learning goals,
- Pedagogy.
- Student feedback through a focus group session 8 students from 2006-2008 classes, 1.5 hour session on 15 questions.

Figure 1: Example Focus Group Questions

- What specific things about EOSC 211 do you think are positive?
- What specific things do you think should be changed?
- Did the course framework enhance your learning experience?
- Do you have any thoughts on the labs?
- Do you have any thoughts on the assignments?
- How was the level of challenge in the course?



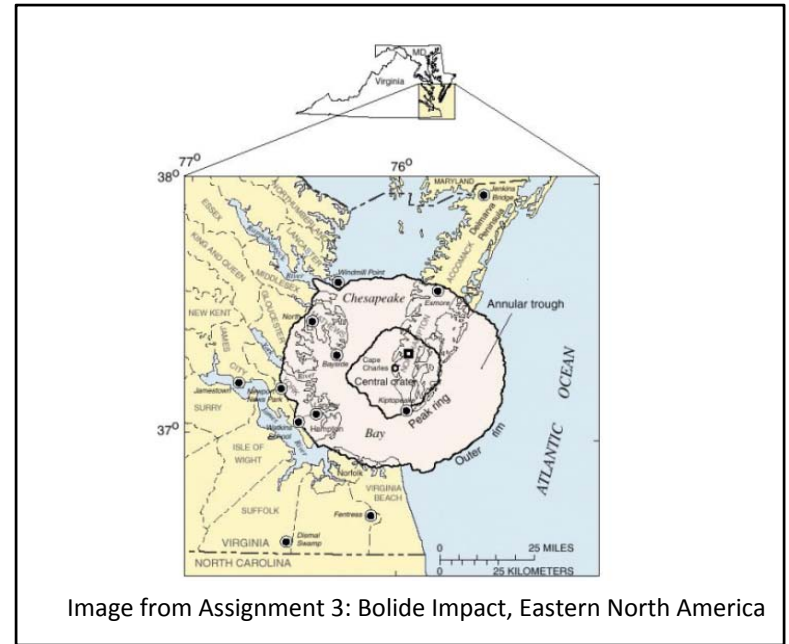
3 – Focus Group Results

Focus group results were fairly unanimous. Major issues were:

- Workload outside of class unreasonably high
- Lack of focus in syllabus
- More supervised computer time needed.

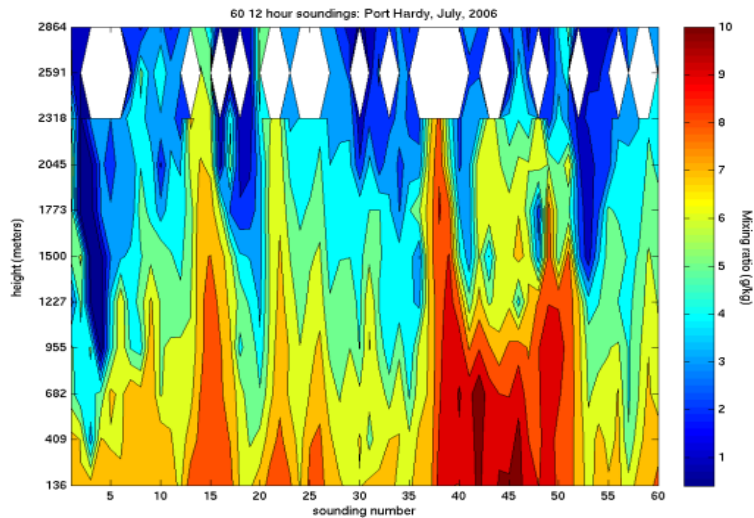
Conversely, the labs and assignments (completed out of class) were deemed most useful for learning the material.

One problem that the authors wish to pursue is the concept of “reasonable workload.” We assume that 6-10 hours is “reasonable” but would welcome thoughts or comments.



4 – Implications and Future Changes

- Revision of pedagogy
- Drastic cut in number of labs and assignments
- Restructure mark allocation
- Develop in-class activities to help learning
- Consider restructuring labs to make learning more efficient (e.g., handing in more, smaller, blocks of effort for evaluation)



EOSC 211 Focus Group Questions

- 1) What specific things about EOSC 211 do you think are positive?
- 2) What specific things do you think should be changed?
- 3) What advice would you give to a friend who plans to take EOSC 211 next semester?
- 4) Do you feel that the skills you learned in EOSC 211 are transferable to other courses or to a future job? If so, please explain. If you have used skills learned from 211 in other contexts, please describe your experience.
- 5) The course uses labs to teach technical material, assignments to apply them to the earth sciences, and exams to test your knowledge. Did this framework enhance your learning experience? Why or why not? If not, how might you change this structure?
- 6) In general, each week had an introductory lecture, a lab, and a wrap-up session. Did this weekly structure enhance your learning experience? Why or why not? If not, how might you change this structure?
- 7) Do you have any thoughts on the labs?
Follow-up:
 - Were the labs useful in improving your comprehension of the course material? How so?
 - How might the labs be improved?
- 8) Do you have any thoughts on the assignments?
Follow-up:
 - Were the examples given in the assignments relevant and/or useful to you?
 - Do you have any suggestions for other kinds of earth science examples that might be used in the course?
 - How might the assignments be improved?
- 9) How was the level of challenge in the course? Too hard? Too easy? Just right?
- 10) Was there anything you think should have been emphasized more during the course but was not?
- 11) Was there anything covered in 211 that you didn't pay much attention to at the time but wish you had focused on more?
- 12) Do you have any other general impressions about 211 that you would like to share?
- 13) What do you think the goals of this course are?
- 14) Did you hear anything about the course before you took it?
- 15) Do you feel the grade breakdown is fair? The current grade breakdown is:
 - i. Labs – 10 labs (1% each = 10% total)
 - ii. Assignments – 5 assignments (10% each = 50% of total)
 - iii. Midterm (15% of total)
 - iv. Final (25% of total)