## TRIAL COURSE OR NEW COURSE PROPOSAL

**SUBMITTED BY:**

| | | | |
|---|---|---|---|
| Department | Geology and Geophysics | College/School | CNSM |
| Prepared by | Jeff Freymueller | Phone | X7286 |
| Email Contact | Jeff.freymueller@gi.alaska.edu | Faculty Contact | |

**1. ACTION DESIRED**
(CHECK ONE): Trial Course [ ]  New Course [X]

Justify upper/lower division status & number of credits: The course is intended for beginning graduate students or experienced undergraduates.

**3. PROPOSED COURSE TITLE:** Beyond the Mouse: Computer Programming and Automation for Geoscientists

**4. To be CROSS LISTED?** NO  If yes, Dept: [ ]  Course # [ ]

GEOS 636 Beyond the Mouse: Computer Programming and Automation for Geoscientists

Basic concepts of computer programming and effective automation of tasks using a computer, with an emphasis on tools and problems common to the geosciences and other physical sciences. Use of MATLAB, shell scripting and various command line tools for data analysis, making scientific figures, maps and visualizations.

**11. COURSE CLASSIFICATIONS:** (undergraduate courses only. Use approved criteria found on Page 10 & 17 of the manual. If justification is needed, attach on separate sheet.)

H = Humanities ☐          S = Social Sciences ☐

Will this course be used to fulfill a requirement
for the baccalaureate core?          YES ☐          NO ☒

IF YES, check which core requirements it could be used to fulfill.

**12. COURSE REPEATABILITY:**

Is this course repeatable for credit?          YES ☐          NO ☒

Justification: Indicate why the course can be repeated

No [X]  Yes [ ]   Library resources are not required for the course.

What programs/departments will be affected by this proposed action?
Include information on the Programs/Departments contacted (e.g., email, memo)

The trial course has had 2 students from the Biology and Wildlife department each of the last two years. Other past versions of the trial course have included students from Atmospheric Sciences and from Chemistry. It may draw students from other departments, but the primary impact will be within the

21. POSITIVE AND NEGATIVE IMPACTS

**APPROVALS:**

| | Date | 9/26/11 |
|---|---|---|
| Sarah Fowell | | |
| Signature, Chair, Program/Department of: | Geology & Geophysics | |

| | Date | 10/6/11 |
|---|---|---|
| | | |
| Signature, Chair, College/School Curriculum Council for: | | |

# Sample Syllabus for GEOS 436/636

The remainder of this file is the actual syllabus for the current trial version of the course, which is in

**Grading:**

This 3-credit class is pass/fail. Passing is based on monthly writing assignments.

| | | |
|---|---|---|
| | Lab 2: Matlab and Variables | |
| Sep 26,27 | Lecture 3: Matlab I: (Advanced) Variables and functions | Jeff Freymueller |
| | Lab 3: Matlab structs and functions | |
| Oct 03,04 | Lecture 4: Fundamental Programming Principles II: Control Structures | Ronni Grapenthin |
| | Lab 4: Matlab flow control | |
| Oct 10,11 | Lecture 5: Matlab I/O I | Ronni Grapenthin |
| | Lab 5: Matlab I/O I (files) | |
| Oct 17,18 | Lecture 6: Matlab I/O II | Ronni Grapenthin |
| | Lab 6: Matlab I/O II (plotting) | |
| Oct 24,25 | Lecture 7: Unix Tools I | Jeff Freymueller |
| | Lab 7: Unix Tools | |
| Oct 31, Nov 01 | Lecture 8: Unix Tools II | Jeff Freymueller |
| | Lab 8: Unix Tools | |

| | | |
|---|---|---|
| | Lab 9: Unix Tools | |
| Nov 14,15 | Lecture 10: Debugging | Ronni Grapenthin |
| | Lab 10: Debugging | |
| Nov 21,22 | Lecture 11: GMT I | Bernie Coakley |
| | Lab 11: GMT – Data mapping | |
| Nov 28,29 | Lecture 12: GMT II | Bernie Coakley |
| | Lab 12: GMT – Data mapping | |
| Dec 5-12 | Independent Study: HTML | Ronni Grapenthin |
| | Lab 13: Setting up a website for project | |

required). Once virtualbox is installed you need to put a linux distribution of your choice (maybe ubuntu) on top of this. See Ronni (ronni <at> gi <dot> alaska <dot> edu) if you need help with that.