PHSC 4011 Earth Science Laboratory

INSTRUCTOR: Mr. Brian M. Cudnik, Manager of Physics Laboratories
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OFFICE HOURS: Tues. 11am – 2pm; Thurs. 11am – 1pm
TEXTBOOK: none (materials will be provided in class)
COREQUISITES: PHSC 4013

COURSE GOALS: This is the Laboratory course to support PHSC 4013. Exercises select from a variety of activities done in the context of Earth Science and are timed to reinforce what is done in class. A tentative list of the exercises selected for Spring 2007 is presented below. Elements from the Online Weather Studies and the Online Ocean Studies courses are included.

LABORATORY SCHEDULE: There will be a total of 15 in-class laboratory meetings and one take-home lab. The take-home lab involves sky watching: weather and clouds by day, and the Moon, planets and stars by night (more details will be given in class). The schedule is tentative and could change at short notice, and time may not allow all fifteen labs to be performed. Labs with (PASCO) are ones used from the lab manual entitled “PASPort Explorations in Earth and Environmental Sciences” (the materials will be provided in class).

- LAB 1: Orientation to Earth Science Laboratory
- LAB 2: Identification of Rocks and Minerals
- LAB 3: Online Lab Exercises: Earthquake and Virtual Dating
- LAB 4: Energy Transfer from One Form to Another
- LAB 5: The Reasons for the Seasons (PASCO)
- LAB 6: Weather Instruments and Forecasts
- LAB 7: Cloud Movement, Type, and Winds
- LAB 8: Hurricane Tracking and Forecasting
- LAB 9: Online Lab Exercises: Global Warming and Virtual River (Discharge, Flooding)
- LAB 10: Air Quality (PASCO)
- LAB 11: Ocean Floor Mapping (PASCO)
- LAB 12: The Greenhouse Effect (PASCO)
- LAB 13: The Sun and Space Weather
- LAB 14: The Scale of the Solar System
- LAB 15: Comparative Planetology: What do Other Worlds have to say about our own?
- Make-up Labs / Take home lab due
MEETING PLACE AND TIME: This Laboratory meets every Thursday of the Spring semester, starting January 18th, in room NSCI 303, from 3:30pm to 5:20pm. Every effort should be made to be on time, since we will start promptly at 3:30pm.

OBJECTIVES: This laboratory course will enable students to have a hands-on experience with some of the main topics of Earth Science, and will include the use of technology in exploring these topics. The exercises are meant to support the work done in the Earth Science course.

GRADING, LAB REPORTS & ATTENDANCE: Each lab exercise will be worth 10 points and will be done in groups. The report will be due at the end of class. A take home lab will be assigned that will be worth 25 points; it will be due at a specified date by the end of the semester. Attendance is required and a roll will be taken near the beginning of each class. Since this is the case, and the roll may influence borderline grade cases, it is again important to be on time, every time. No grade is given for lab periods where students do not have a valid excuse for missing class. Students can make up one missed lab by the end of the semester (note the Lab Make-up day scheduled near the end of the semester). Opportunities for extra credit may be given in a few of the labs.