GG410 Undergraduate Seminar Fall 2017

Lecture: M 1:30 – 3:30 PM POST 723

Instructor: Greg Ravizza, POST 712, ravizza@hawaii.edu

Office hours: Monday 3:30 - 4:30 PM, Wednesday 10:30 - 11:30 AM, and by appointment.

Objectives. In the fall 2017 term GG410 will be designated as both an “E” and an “O” focus course. As an “E” focus course the essential objective is to contribute to the development of informed and responsible citizens able to think critically and to analyze the ethical implications of geoscience research. By learning to apply ethical principles within a cohesive framework, students will become more adept at dealing with moral dilemmas that ask why, should, must, and ought of current controversies involving geoscience. Embedded within this framework emphasizes ethics, GG410 will also meet the hallmarks required of an “O” focus course. See below for additional detail on how “E” and “O” focus requirements will be satisfied.

During this course, the student will:

1. improve oral communication skills, primarily as an individual but also as a member of working groups.

2. define ethics, both as a variety of theoretical frameworks and as a personal framework for making decisions about science-related issues

3. explore a variety of controversial issues at the intersections(s) of societal needs/threats and geoscience.

4. develop and practice using ethically- and scientifically-valid frameworks for reaching decisions about controversial science-based issues.

Text: Course reading and resources will be posted on the Laulima site, for example the professional association’s policy manual: American Geophysical Union Scientific Integrity and Professional Ethics; the National Science Foundation’s Responsible Conduct of Research. There is no required textbook.

Prerequisites: An introductory geology course (GG101 or comparable) and an introductory geology lab (GG101L or comparable) are required. The geology lab course may be taken concurrently, but this is not encouraged. In addition experience has shown that this course is best suited to more senior students because they have the opportunity to draw upon prior course knowledge in their oral presentations.

Overview of how focus designations will be addressed:

This course has a Contemporary Ethical Issues (E) Focus designation. Contemporary
ethical issues are fully integrated into the main course material and will constitute at least 30% of the content. At least 8 hours of class time will be spent discussing ethical issues. Through the use of lectures, discussions and assignments, students will develop basic competency in recognizing and analyzing ethical issues; responsibly deliberating on ethical issues; and making ethically determined judgments.

This course also has an Oral Communication (O) Focus designation. Each student will participate in three oral communications assignments (or a comparable amount of oral communication activity). Students will receive explicit training in oral communication to develop skills and proficiencies. Students will receive specific feedback, critiquing, and grading of oral communication assignments from the instructor. Approximately 60% of the final grade will be a function of the student’s oral communication activities.

Course content & relationship to programmatic student learning objectives (SLOs):

The purpose of this course is to give GG undergraduate majors experience in giving oral presentations on topics concerning contemporary ethical issues in geoscience. In the beginning of the semester, the course covers the basic aspects of preparing and presenting a talk (good speaking style, good slide layout, how to introduce a speaker, how to write an abstract for your talk, etc.) Student effort and class time is directed toward presenting talks they have prepared themselves on topics concerning contemporary ethics issues.

The first major ethics theme of the course is scientific ethics, including best practices, scientific fraud, plagiarism, conflicts of interests, abuse of power, intellectual property, role of institutional policy, and interpersonal conflicts. The second major theme will be the intersection of society and geoscience, including conveying degrees of confidence and uncertainty about natural phenomena, limits to available resources, etc. Students choose a topic or case study and develop ethical arguments in their presentations. These themes will be fully integrated into the course content; students will discuss and develop topics from these themes into their oral presentations. Students are given the opportunity to identify topics they will speak about contingent upon instructor approval. Presenters will receive both verbal and written feedback from the instructor and their peers.

The primary programmatic student learning objective (SLO) this course satisfies is SLO #4 (Students can reconstruct, clearly and ethically, geological knowledge in both oral presentations and written reports), particularly SLO #4c pertaining to scientific ethics. Other SLOs are addressed as students prepare their talks. Almost without exception each student prepares and presents presentations that are related to SLO #1 (Students can explain the relevance of geology and geophysics to human needs, including those appropriate to Hawaii, and be able to discuss issues related to geology and its impact on society and planet Earth.) and SLO #5 (Students can evaluate, interpret, and summarize the basic principles of geology and geophysics, including the fundamental tenets of the sub-disciplines, and their context in relationship to other core sciences, to explain complex phenomena in geology and geophysics.)

Schedule: A detailed course schedule will be finalized when the number of enrolled students is known. A tentative schedule of topics concludes this syllabus.
Assessment Instruments

**Presentation 1:** Students present content drawn from an introductory geoscience course in a style suitable for a non-expert audience. The presentation time is 10 minutes and the format/style is a lecture type venue. The unique emphasis of this assignment is on clear and effective presentation of content that is largely objective (part of a body of accepted understanding). (10% of course grade, of which 100% counts toward the O-focus)

*Preparative work in advance of presentation:* For this assignment there are three elements of prior preparation: (1) instructor lecture on public speaking; (2) video clips of science oriented presentations (unrelated to GG410) available on the internet; (3) in class discussion of presentation content with an emphasis aim on developing effective visual aids to convey conceptual content.

*Student Feedback:* For this assignment feedback on content and organization will be given to the group as a whole. Feedback on individual presentations will concentrate on individual delivery style. These comments will be given to each student via Laulima posting. They will take the form of a tally of strengths and weaknesses of each student’s presentation style, identifying areas where the students should work to improve. The expectation for this assignment is that if students participate and demonstrate effort they will receive full credit.

**Presentation 2:** Students are required to make a persuasive presentation related to an issue in science ethics. Here students are expected to draw from publications from scientific societies (the American Geophysical Union, American Geological Institute, National Science Foundation) to develop a framework for considering an ethical issue in the practice of science, such as scientific fraud, plagiarism, conflicts of interests, abuse of power, intellectual property, role of institutional policy, or interpersonal conflicts. Again the length of each presentation will be 10 minutes. Students will be given the option to modify the details of the assignment. (30% of course grade, of which 60% counts toward the O-focus and 40% counts toward the E-focus)

*Preparative work in advance of presentation:* For this assignment, student presentations will be evaluated by the instructor prior to their presentations in individual meetings or via Laulima. The purpose of this preparatory feedback is to help the students refine their arguments and organization prior to the in class presentation. In addition there will be lecture content and discussion on ethical decision-making frameworks.

*Student Feedback:* For this assignment feedback after the oral presentation will come in two forms. First, students will receive written evaluation from the instructor with individual sub-scores for: (1) Delivery of presentation (30% of assignment). (2) Quality and accuracy of content (30% of assignment). (3) Organization and quality of visual aids (30% of assignment). (4) Response to questions and depth of knowledge (10% of assignment). Second, students will receive a written summary evaluation of their presentation from their peers, which will include content (ethics) and presentation (oral) critiques.
**Presentation 3:** Students are required to prepare a 10-12 minute presentation on a topic at the intersection of society and geoscience, which could include conveying degrees of confidence and uncertainty to the public, policy makers, and resource managers about the frequency, magnitude, duration, recurrence interval of natural phenomena; limits to available resources, or other ways in which data collected by geoscientists is used to shape public policy. Students will choose a specific topic or case study (e.g., man-made earthquakes associated with hydraulic fracturing (fracking), water resources and the Dakota access pipeline, the Fukushima crisis that developed following an earthquake and tsunami) and develop their presentation within an ethics framework. The class will be split into small (3-4 person) groups in which the students will listen to one another’s practice talks in a meeting outside of the class period. The final presentations will be given to the entire class. Students will provide oral and written feedback to the presenters in the small group meetings, and also submit the written feedback to the instructor. (40% of course grade, of which 60% counts toward the O-focus and 40% counts toward the E-focus).

*Preparative work in advance of presentation:* Students will learn about ethics frameworks, including the Utilitarian approach, the Rights approach, the Fairness Approach, the Common Good Approach, and the Virtue approach, through lecture, assigned readings and class discussion. As noted above, for the final presentation students present practice talks to a sub-set of the class in advance of the final presentation. Students will receive comments on presentation files (likely powerpoint) from the instructor in advance of the final presentation.

*Student Feedback:* Students will get verbal and written feedback from their peers and a written list of suggestions from the instructor for improving their presentation materials. After the final presentation, students will receive written evaluation from the instructor with individual sub-scores for: (1) Delivery of presentation (30% of assignment). (2) Quality and accuracy of content (30% of assignment). (3) Organization and quality of visual aids (30% of assignment). (4) Response to questions and depth of knowledge (10% of assignment).

*Participation:* Attendance and active participation in small group discussions counts 5% of the course grade. If you need to miss class you need a reason that is acceptable to the instructor to be given in advance. Medical emergencies are always an acceptable reason to miss class when documented by health care provider.

*Reviews of peers presentations:* Written evaluations of presentations made by fellow students in the GG410 course will be submitted for evaluation by the instructor after each of the three main presentations, as well as after the practice session for the 3rd presentation. (15% of course grade, of which 60% counts toward the O-focus and 40% counts toward the E-focus)
**Title IX:** The University of Hawai‘i is committed to providing a learning, working and living environment that promotes personal integrity, civility, and mutual respect and is free of all forms of sex discrimination and gender-based violence, including sexual assault, sexual harassment, gender-based harassment, domestic violence, dating violence, and stalking. If you or someone you know is experiencing any of these, the University has staff and resources on your campus to support and assist you. Staff can also direct you to resources that are in the community. For more information, including where to seek assistance, please see: [https://manoa.hawaii.edu/titleix/pdf/Sample-Title-IX-Syllabus-UHM.pdf](https://manoa.hawaii.edu/titleix/pdf/Sample-Title-IX-Syllabus-UHM.pdf)

**KOKUA:** Any student who feels s/he may need an accommodation based on the impact of a disability is invited to contact me privately. I would be happy to work with you, and the KOKUA Program (Office for Students with Disabilities) to ensure reasonable accommodations in my course. KOKUA can be reached at (808) 956-7511 or (808) 956-7612 (voice/text) in room 013 of the Queen Lili‘uokalani Center for Student Services.