ERTH410 Undergraduate Seminar Fall 2019

Lecture: M 1:30 – 3:30 PM POST 723

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

Tentative Office hours: Monday 3:30 - 4:30 PM, but it is best to make an appointment.

Objectives. In the fall 2019 term ERTH410 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 frame work emphasizing ethics, ERTH410 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. learn an applied framework for making ethical deliberations, using the “eight key questions” approach developed by James Madison University (http://www.iep.utm.edu/ethics/#SH2a).

3. explore a variety of controversial issues at the intersections(s) of societal needs/threats and geoscience as part of their preparation of oral presentations.

4. practice integrating 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. There is no required textbook.

Prerequisites: An introductory geology course (ERTH101 or comparable) and an introductory geology lab (ERTH101L or comparable) are required. 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 participation in lectures, discussions and oral presentations, students will develop basic competency in ethical deliberation using the

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 Earth Sciences 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, effective slide layout, how to introduce a speaker, etc.) Student effort and class time is directed toward presenting talks they have prepared themselves on topics concerning contemporary ethics issues.

The major theme will be the intersection of society and geoscience, including the impact of uncertainty about natural phenomena, limits to available resources, etc. on ethical deliberation. Students choose a topic or case study and develop ethical arguments to support a particular course of action or critique the actions of others in a case study. 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. At the end of the term, applied ethics with an emphasis on topics relevant to individual STEM students and professionals, including best practices, scientific fraud, plagiarism, conflicts of interests, abuse of power, intellectual property, role of institutional policy, and interpersonal conflicts will be touched upon.

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 list of assignments concludes and the associated weights for grading follows.
Assignments/Assessment Instruments

Presentation 1: Students present content drawn from an introductory geoscience course that has ethical dimensions/implications 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 ethical considerations and how they can be applied to topics in Earth and environmental science. (15% of course grade, of which 66% counts toward the O-focus & 34% to the E-focus)

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

Presentation dates: TBA.

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 lecture content and their own interests to develop a presentation that outlines possible approaches to addressing an ethical issue, such as scientific fraud, resource utilization, conflicts of interests, abuse of power, intellectual property, role of institutional policy, or interpersonal conflicts. Although, topics related to current events at the intersection of science and society this is not an explicit requirement of this assignment. As in presentation 1, the length of each presentation will be 10 minutes. Students will work with the instructor to modify the details of the assignment. (25% 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 topics must be approved by the instructor and student presentations will be evaluated by the instructor prior to their presentations in individual meetings. Students will have the option to organize themselves into groups to debate a specific ethical dilemma. The purpose feedback during preparation of the presentation is to help the students refine their arguments and organization prior to the in-class presentation.

Presentation dates: TBA

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

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(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.

**Presentation dates: TBA**

**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).

**Quizzes:** There will be at least one quiz on ethical concepts worth 5% of the course grade.

**Participation:** 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. See attendance section below.
Reviews of peer presentations: Verbal peer-evaluations of each presentation will made by small groups (3 to 4) of fellow students in the ERTH410. These groups will evaluate both the quality of the oral presentation and the strength/quality of the ethical arguments. Each review group will have a recorder who will prepare a written summary of the evaluation meeting for the benefit of the instructor and the student speaker. Recorders will be graded on their work (5% 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

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.

Attendance:
- It matters & is required.
- Nominally, participation is 5% of course grade.
- An excused absence requires a note from a Dr. or similar.
- If non-attendance becomes a persistent problem you will be contacted directly. You can be failed for excessive non-attendance.
- I use this policy b/c it is unfair to your peers to skip out on their talks b/c you are busy with other things. Also, if you miss ethics discussions in class you are not meeting the E hallmark requirement.