First Year Seminar-SCIE113, Section 21A, Term 2, January-April, 2015

Instructor: Dr. James Feng, Mathematics Department, www.math.ubc.ca/~jfeng

Seminars: MWF, 1-2 pm, Room: SWNG 307

This is a highly interactive course where contributions and views of everyone are essential. Please feel free to speak up. I appreciate all feedback from you (speak to me after class, email or post on 'all sections' Connect Discussion). Please be considerate of other students: turn off your cell phone and listen actively while other people are speaking during class discussions.

Science and Society guest speaker presentations: Thursdays at 12:30 pm, every other week (with no class on the following Fridays). All sections meet in Hebb 100. Attendance is mandatory. Please check 'all sections' Connect for speaker dates throughout the term. Late-arriving students will lose marks.

Office Hours: Dr. James Feng, by appointment (james.feng@ubc.ca); TA Shannon Obradovich, by appointment (s.obradovich@fisheries.ubc.ca).

Units Topics: This course consists of 6 units, each with learning objectives and writing assignments.

Unit 1 - Nature of science
Unit 2 - Science as a way of knowing
Unit 3 - Presenting scientific arguments
Unit 4 - Evidence in a scientific worldview
Unit 5 - Scientific community
Unit 6 - Science and the global citizen

Grades: Note that there is no final exam. See 'all sections' Connect for all due dates. You must pass both the final Term Project and the Participation mark to receive a passing grade.

Seven 'Evidence Worksheets' 1% each= **7%**

The Evidence Worksheets are note-taking assignments for the 'Science in Society' presentations, with a variety of critical thinking questions to guide you in analysis of argumentation from a scientific perspective. Due immediately after the presentation. Late-arriving students will lose marks.

Three in-class Unit Writing essays: 2% each draft x 3; 5%-12%-15% for revised essays = **38%**

You will draft three short essays (approximately 500 words each) written to prompts using appropriate scientific writing skills to practise writing an argumentative essay. Essays will be marked for both scientific content and essay structure. You will then have the opportunity to revise your essay based on feedback.

Three Calibrated Peer Reviews: 3%-5% -7% = **15%**

You will carry out calibrated peer review of example essays, provide feedback to peers, and reflect on your own essays using the online Calibrated Peer Review system.

Term Project: Revised outline=3%, Version 1=7%; Final Term Project=15% = **25%**

You will write an argumentative essay (1250 words), with feedback throughout the term, using the following prompt, "Identify a current controversy in science that interests you. State your claim and present the evidence that justifies your position." The goal of having feedback (formative assessment) is to encourage your reflection on the place of science in your life and future, incorporating the course themes of the nature of science and science in society. The term project is expected to be an evidence-based argument that is motivated by your interests. Science librarians can help you research and find appropriate library resources, and cite references.

Participation **15%**

You will be assessed on completion of homework, written reflections and other writing assignments, participation in class discussion, willingness to generate questions and share and explore ideas.

Course Website = http://connect.ubc.ca
The SCIE113 Connect course (all sections) contains learning objectives for each unit, due dates and times, a variety of material and a discussion board. All readings, worksheets and other material for homework and in-class work are posted in chronological order. You will need to print some of these files; see the overview to help guide you. You should use a binder to organize your notes and material. For technical assistance, contact the IT Services Helpdesk http://www.it.ubc.ca/contact/helpdesk.html There are no required textbooks.

Calibrated Peer Review Website = https://cpr.elearning.ubc.ca
You will use the SCIE113 Calibrated Peer Review site to give and receive constructive feedback on your three in-class essays. This feedback will assist you as you make your revisions.

Policies:

- All students are expected to participate by speaking in class, working in groups in a constructive and respectful manner, and by preparing for class (completing in-class assignments, assigned readings, and/or homework).
- Practice writing assignments will be considered part of the participation grade. It is the student's responsibility to be prepared for class with writing pieces and other assignments.
- Students who come to class unprepared (without assigned homework, for example) will be asked to leave and as a result will have marks subtracted from their participation grade.
- All writing submitted in this course should be the student's original work. Students should be aware of the UBC policy on academic integrity and plagiarism: (http://help.library.ubc.ca/planning-your-research/academic-integrity-plagiarism/) and adhere strictly to it for all writing in this course.
- Academic misconduct (including cheating) of any kind will not be tolerated. The consequence for academic misconduct will include a grade of zero for the assignment and possible expulsion from the course and suspension from the University.
- This is a writing intensive course with the goal of improving your scientific writing using an argumentative essay approach. You will be expected to complete practice assignments and in-class assessments using a pen and paper. No electronic devices are allowed during unit writing classes. Appropriate use of grammar and correct spelling is expected. You are encouraged to bring a dictionary as a spelling resource, hard copies only. Tutoring services are available from the UBC writing Centre if you need additional help: http://www.writingcentre.ubc.ca/tutoring/index.html
- Students will be asked to submit their Term Project to TurnItIn in order to verify originality.
- All assignments are due on the specified date and time. Late assignments will be penalized at a rate of 10% per day. Late evidence worksheets will not be accepted.
- Students who have physical illness or experience emotional stresses that cause them to miss classes or assignments should make those known to the instructor right away. Absences from unit writing classes and/or evidence worksheets (completed at speaker series) will be granted at the discretion of your instructor. There are no make-up opportunities for unit writing assessments, participation marks, or calibrated peer review activities or evidence worksheets. If you are absent or miss assignments, you should talk with your instructor who will discuss options with you. These options may include an adjustment of the weighting of your final mark (on a limited basis) to other activities in the course.
- Students with disabilities who have registered with Access and Diversity (Student Services) http://www.students.ubc.ca/mura/access/, including Diversity Services should notify the instructor.

SCIE 113 – Participation Mark: Objectives and Grading Criteria

Why do we have a participation mark? What are we trying to measure? How are we keeping track of your contributions?

1. We are measuring how prepared you are when you come to class so that you can make positive contributions and have fruitful discussions during class time. To measure this, we collect occasional homework at the very start of class, so come to class promptly!

2. We are measuring the development of your critical thinking skills. We will ask you to do occasional 1-2 minute written reflections in class that we collect.

3. We are measuring your contribution to class discussions in both small group and whole class discussions. The purpose of oral discussion is for you to share ideas so that it prompts someone else to think. We may include occasional peer evaluation for small group and whole class discussions.

You will get an idea of how you are doing on your participation mark half-way through term.

Suggested Mark (Total/15)	Participation Criteria
13-15	Engaged contributor: contribution consistently adds to, extends or deepens the conversation. Consistently helps fellow students to contribute by making time for them, building on their ideas and encouraging their contributions. Completes all homework and comes to class promptly; completes all written reflections.
11-12	Good contributor: contributions consistently add to, or deepen the conversation and occasionally extend it. Occasionally helps fellow students in class to contribute. Completes almost all homework and written reflections.
9-10	Average contributor: contributions add to the conversation and occasionally deepen or extend it. Seldom helps fellow students to contribute. Completes most homework and written reflections.
7-8	Fair contributor: contributions usually do not add to the conversation. Misses classes and/or comes late. Seldom helps fellow students to contribute. Misses a fair bit of homework and written reflection work.
5-6	Poor contributor: contributions do not add to the conversation. Comes to class unprepared, comes late, or is absent. Often hinders fellow students to contribute. Misses a lot of homework and written reflections.
0-4	Few to no contributions. Often unprepared, late, or absent. Often hinders fellow students to contribute. Misses much homework.

SCIE 113 Learning Objectives

Unit 1: Defining the nature of science

By the end of this unit, you should be able to…

- Provide an opinion on what defines the nature of science
- Identify, and restate in your own words, the thesis statement in a piece of writing
- Create a thesis statement in your own writing

Unit 2: Science as a way of knowing

By the end of this unit, you should be able to…

- Discuss how science as a way of knowing is used to understand the world, e.g. when is a scientific approach appropriate?
- Give examples from personal experience of scientific and non-scientific approaches
- Put science as a way of knowing in context, alongside, and interacting with other ways of knowing
- Organize your writing into paragraphs
- Describe peer review, give and receive feedback from peers, and discuss the role of peer review in science

Unit 3: Presenting scientific arguments

By the end of this unit, you should be able to…

- Identify the elements of an argument: claim and the interpretation of evidence that supports the claim
- Recognize when it is appropriate to use the different types of scientific literature such as primary literature, reviews and textbooks, and cite it appropriately
- Defend the validity of an argument by evaluating evidence in a variety of genres, including popular media, websites and scientific journals
- Use an outline to organize a scientific argument with a claim and supporting evidence

Unit 4: Evidence in a scientific worldview

By the end of this unit, you should be able to…

- Explain what constitutes scientific evidence and identify it in different contexts
- Give an example of how several lines of evidence come together to build a scientific model and how the acceptance of the most well supported models creates a scientific paradigm
- Recognize the strengths and shortcomings of scientific evidence derived from observations and experiments, and from models and mathematical relationships
- Gather evidence, and restate it in your own words, for use in your writing

Unit 5: Scientific community

By the end of this unit, you should be able to…

- Explain the different roles of people involved in scientific research
- Compare and contrast applied and basic research
- Use a variety of sources of information and write an abstract

Unit 6: Science and the global citizen

By the end of this unit, you should be able to…

- Outline your opinion on where science can contribute positively to society in the future
- Identify where you are using a scientific approach in your daily life and where you see yourself using science in the future
- Identify opportunities to do research in your area of interest
- Write an evidence-based report on a current controversy in science that interests you, and demonstrates mastery of the course's writing goals.