First Year Seminar in Science - SCIE113, Section 109, 2012F
Instructor: Dr. Joanne Fox, Michael Smith Laboratories and Department of Microbiology and Immunology, UBC, joanne@msl.ubc.ca, 604-827-3911

Seminars: MWF, 9:00AM, room LSK462
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 Connect bulletin board). 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: Held Thursdays at 12:30pm, every other week (with that Friday’s class cancelled). All sections meet in room B150 of the Chemistry building. Attendance is mandatory. Please check the course website for speaker dates throughout the term.

Office Hours: Wednesdays 10-11am or Thursdays 2-3pm or by appointment (email Dr. Fox at joanne@msl.ubc.ca to set up an appointment; Dr. Fox's office is room 225 in the Michael Smith Building, 2185 East Mall). The TA for our section is James Ferguson.

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 course website for all due dates.

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.

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) on the ideas from the course using appropriate scientific writing skills. 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 opinion 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 site contains learning objectives for each unit, supporting material, required and suggested extra readings, discussion board. For Connect help, email Angela Lam ang.dms@gmail.com

Calibrated Peer Review Website = http://cpr.elearning.ubc.ca
• You will use SCIE113 Calibrated Peer Review site to elicit feedback on your three in-class essays. This feedback should assist you as you make your revisions. For CPR help, email Andrea Han han@science.ubc.ca

Course Package/Textbooks: A course package with all required readings is available from the bookstore. There are no required textbooks. You should use a binder to organize additional in-class notes and extra material.

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://www.library.ubc.ca/home/plagiarism/) and adhere strictly to it for all writing in this course.
• Academic misconduct (or 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. You will be expected to complete practice assignments and in-class assessments using a pen and paper. No laptops 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 in class on the specified due date. 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 the Disabilities Resource Center 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, meaning you have to come to class promptly too.

2. We are measuring the development of your critical thinking skills. We will ask for 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 do this during class time. 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.

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<thead>
<tr>
<th>Suggested Mark (Total/15)</th>
<th>Participation Criteria</th>
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<tbody>
<tr>
<td>13</td>
<td>Engaged contributor: contribution consistently adds to, extends or deepens the conversation. Completes all homework comes to class promptly; completes all written reflections.</td>
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<tr>
<td>11</td>
<td>Good contributor: contributions consistently add to, or deepen the conversation and occasionally extend it. Completes almost all homework and written reflections.</td>
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<tr>
<td>9</td>
<td>Average contributor: contributions add to the conversation and occasionally deepen or extend it. Completes most homework and written reflections.</td>
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<tr>
<td>7</td>
<td>Fair contributor: contributions usually do not add to the conversation. Misses classes and/or comes late. Misses a fair bit of homework and written reflection work.</td>
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<tr>
<td>5</td>
<td>Poor contributor: contributions do not add to the conversation. Comes to class unprepared, comes late, or is absent. Misses a lot of homework and written reflections.</td>
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SCIE 113 Learning Objectives

Unit 1: Defining the nature of science
By the end of this unit, students will be able to…
• Provide an opinion on what defines the nature of science
• Identify, and restate in their own words, the thesis statement in a piece of writing
• Create a thesis statement in their own writing

Unit 2: Science as a way of knowing
By the end of this unit, students will 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 their writing into paragraphs

Unit 3: Presenting scientific arguments
By the end of this unit, students will 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, students will 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 their own words, for use in their writing

Unit 5: Scientific community
By the end of this unit, students will 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, write an abstract

Unit 6: Science and the global citizen
By the end of this unit, students will be able to…
• Outline their opinion on where science can contribute positively to society in the future
• Identify where they are using a scientific approach in their daily life and where they see themselves using science in the future
• Identify opportunities to perform research in their area of interest
• Write an evidence-based report, on a topic that relates to the student's life, that demonstrates mastery of the course writing goals