100 West 49th Avenue, Vancouver, BC, Canada V5Y 2Z6
604.323.5511 langara.ca

Creation date: April 4, 2023
Revision date:

SAMPLE COURSE OUTLINE

Course Code, Number, and Title:

SCIE 1114: Science Literacy

Course Format:
[Course format may vary by instructor. The typical course format would be:]

Lecture 3.0 h + Seminar 3.0 h + Lab. 0.0 h

Credits: 4.0 **Transfer Credit:** For information, visit bctransferguide.ca

Course Description, Prerequisites, Corequisites:

All scientists today must be scientifically literate in order to explain, defend, promote, and analyze the strengths and limitations of science in society. Students in this course develop scientific literacy as they learn to peer review, write, and defend a solid scientific thesis that is supported by their analysis of scientific papers from relevant peer reviewed data. Through active participation, students develop oral and written communications skills important in communicating the wonders and limitations of today's scientific knowledge. The course structure includes student-developed evidence worksheets to analyze the scientific research presented and to contribute to calibrated peer reviews and scientific argumentative essay to support up to three theses focused on scientifically relevant topics to society. This course meets the same learning objectives of SCIE 1113 but is intended for science students who need extra support to meet these learning objectives. This course is restricted to students enrolled in science programs.

Students will receive credit for only one of SCIE 1113 or 1114.

Registration in this course is restricted to students admitted to the following programs: Associate of Science Degree (general program and all majors), Diploma in Arts and Science (in Faculty of Science), Diploma in General Education (in Faculty of Science), Diploma in Computer Studies, Certificate in Internet and Web Technology, Certificate in Arts and Science (Engineering), Diploma in Human Kinetics, or Diploma in Kinesiology.

Prerequisite(s): One of the following: a minimum "C" grade in English First Peoples 12, English Studies 12, Literary Studies 12, or equivalent; IELTS 6.5 (with a minimum score of 6 in each area: listening, reading, writing, and speaking); or LET 2 (or LPI equivalent).

Learning Outcomes:

1. Articulate and discuss what science is and how it is done
2. Practice critical thinking
3. Communicate effectively through writing
4. Put science in context
5. Act professionally as a member of the scientific community.

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Instructor(s): TBA
Office: TBA **Phone: (604) 323-XXXX**
Office Hours: TBA **Email: TBA**

Textbook and Course Materials:
[Textbook selection may vary by instructor. An example of texts and course materials for this course might be:]

For textbook information, visit https://mycampusstore.langara.bc.ca/buy_courselisting.asp?selTerm=3|8

Note: *This course may use an electronic (online) instructional resource that is located outside of Canada for mandatory graded class work. You may be required to enter personal information, such as your name and email address, to log in to this resource. This means that your personal information could be stored on servers located outside of Canada and may be accessed by U.S. authorities, subject to federal laws. Where possible, you may log in with an email pseudonym as long as you provide the pseudonym to me so I can identify you when reviewing your class work.*

Assessments and Weighting:
Final Exam
Other Assessments
[An example of other assessments might be:]

Participation: 15%
Assignments: 15%
Essay 1: 15%
Project/Presentation: 25%
Term Paper: 30%

Grading System:
Specific grading schemes will be detailed in each course section outline.

Information unavailable, please consult Department for details.

Topics Covered:
[Topics covered may vary by instructor. An example of topics covered might be:]

Below are detailed learning objectives associated with each of these goals:

UNIT 1: DISCUSS AND DEFINE WHAT SCIENCE IS
1.1. Articulate and discuss what science is and how it is done
1.1.a Articulate characteristics of science: what it is and how it is done
1.1.b Recognize the tentativeness of scientific knowledge
1.1.c Define what a “theory” is in science, and distinguish from a layperson's definition
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1.2. Practice critical thinking
1.2.a Evaluate different perspectives on science
1.2.b Analyze a case study to identify characteristics of science
1.3. Act professionally as a member of the scientific community
1.3.a Be prepared for class by completing pre-class activities
1.3.b Complete assignments in a timely manner
1.3.c Arrive punctually to class
1.3.d Contribute fairly to group activities
1.3.e Communicate with and provide feedback to peers respectfully

Unit 2. WRITING AN ARGUMENTATIVE ESSAY
2.1.Articulate and discuss what science is and how it is done
2.1.a Discuss the role of peer review in science
2.1.b Provide constructive and respectful peer review
2.2 Practice critical thinking
2.2.a. Define and identify the elements of an argument: claims, reasons, evidence, counterarguments and warrants.
2.2.b. Create a logically consistent argument in your own words, including a claim, reasons, evidence, counterargument and if necessary warrants
2.3.Communicate effectively through writing
2.3.a. Develop an outline to structure an argumentative essay
2.3.b. Organize writing into paragraphs
2.3.c. Distinguish between paraphrasing, quoting and plagiarizing
2.3.d. Gather evidence and re-state it in your own words, for use in your writing
2.4. Act professionally as a member of the scientific community
2.4.a Give constructive feedback
2.4.b Demonstrate openness to feedback
2.4.c Communicate respectively and objectively

UNIT 3. BUILDING A SCIENTIFIC ARGUMENT
3.1. Articulate and discuss what science is and how it is done
3.1.a Explain what scientific evidence is, and recognize that various types of evidence are used in different disciplines
3.1.b Explain the meaning of these concepts in science: reliability, validity, correlation, causation, and logical fallacies.
3.1.c. Recognize that there are multiple ways of producing scientific knowledge
3.1.d. Articulate similarities and differences in the ways that scientific knowledge can be produced.
3.2.e. Recognize that there is no general scientifc method that scientists follow, but rather, a number of elements that scientist use
3.2 Practice critical thinking
3.2.a Identify scientific evidence in different contexts.

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3.2.b. Analyze the validity and reliability of an argument by evaluating evidence
3.2.c. Defend a claim by constructing a reliable and valid argument that is well supported by evidence
3.2.d. Recognize the relevance of bias and uncertainty for the reliability and validity of a study.
3.2.e. Recognize the strengths and shortcomings of scientific evidence derived from observations, as well as from laboratory, field and numerical (modelling) experiments.
3.3. Communicate effectively through writing
3.3.a. Recognize and use appropriate scholarly sources with proper citation.
3.5. Act professionally as a member of the scientific community
3.5.a Incorporate and respond to feedback in your written work.

4. SCIENCE IN CONTEXT
4.1 Articulate and discuss what science is and how it is done.
4.1.a. Recognize that science can contribute to both the creation of, and the solutions to, complex societal issues.
4.1.b. Recognize that, as for all human endeavours, science is subject to many influences.
4.1.c. Recognize that research funding is tied to larger sociopolitical structures, and that this influences what research gets done and what does not get done.
4.1.d. Demonstrate that the context in which scientists work, and their personal backgrounds, impact the choices that they make in their work: for example, what they study.
4.2. Practice critical thinking
4.2.a. Compare basic and applied research.
4.2.b.Recognize the relevance of, and difference between, uncertainty and ignorance
4.2.c. Describe unconsciousbias, and situations in which scientist's unconscious biases have impacted their judgment; explain how unconscious biases can be detrimental to the production of scientific knowledge.
4.3. Communicate effectively through writing
4.3.a. Write an evidence-based paper that makes an argument about a current, unresolved scientific research question
4.4 Put Science in Context
4.4.a. Describe how merit systems can favour certain groups of people, and why this can be detrimental to the production of scientific knowledge.
4.4.b. Recognize that scientific knowledge has limits
4.4.c. Put science as a way o fknowing in context , alongside and interacting with other ways of knowing.
4.4.d. Give examples of questions that science cannot answer
4.4.e. Develop a position on the contributions that science can make to complex societal issues, and describe the limitations of its potential contributions.

As a student at Langara, you are responsible for familiarizing yourself and complying with the following policies:

College Policies:

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E1003 - Student Code of Conduct
F1004 - Code of Academic Conduct
E2008 - Academic Standing - Academic Probation and Academic Suspension
E2006 - Appeal of Final Grade
F1002 - Concerns about Instruction
E2011 - Withdrawal from Courses

Departmental/Course Policies:

Information unavailable, please consult Department for details.

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