

SPECIALIZED COURSES

PHIL 144- Intro to Philosophy of Science

An introduction to philosophical issues concerning the nature of science. *Breadth-Humanities/Science*

PHIL 201 - Epistemology

A critical overview of recent accounts of the nature and scope of human knowledge and of justified or rational belief, and of the connection between methodology and knowledge.

PHIL 203 - Metaphysics

An examination of central problems of metaphysics such as space and time, universals and particulars, substance, identity through time and personal identity.

PHIL 341 - Philosophy of Science

A study of the nature of scientific enquiry, classificatory systems, laws and theories, the role of observation in science, the demarcation between science and non-science, causality, the status of theoretical constructs, and explanation.

For more information contact:

Student Advisor
philmgr@sfu.ca

Philosophy and Methodology of Science Certificate

If you're already majoring or minoring in a science field, the **Philosophy and Methodology of Science Certificate** can help broaden and deepen your understanding.

Specialized courses help students acquire core critical and philosophical reasoning skills to enhance the study of science in general.

Learn these transferrable skills:

- learn to read critically and understand complex texts,
- construct a focused argument,
- write clearly, persuasively and concisely.

Think beyond the facts -

Are you curious about science?

Philosophy and Methodology of Science Certificate

Specialized courses help students learn more about science, and gain advanced reading, writing and analytical skills.

sfu.ca/philosophy/undergrad/methodology-of-science-certificate.html

Why scientists should study Philosophy...

You're already thinking about science because you're taking a science major or minor...

...but what do you really think about science?

You know there's a lot more to science than facts, experiments and data. And not all the answers are easy. For example, how do you know when your results are the right ones? Or if you're drawing the correct conclusions?

And how do bias and objectivity influence research? Did you know that selection impacts how you analyze and interpret your results?

Philosophy can help — after all, science started out as natural philosophy. Philosophy helps develop core reasoning and analytical skills so you can dig deeper in science. Many scientists are also philosophers, so you're in good company!

- Gottfried Leibniz, the mathematician and founder of calculus .
- Isaac Newton, physicist.
- René Descartes, mathematician
- William James, psychologist

More recently, Einstein's philosophical exploration made Cassini's expedition to Saturn possible!

If you're already majoring or minoring in a science field , the **Philosophy and Methodology of Science Certificate** can help you understand your subject as well as develop your writing, reading and analytical skills.

"In looking for a new foundation, [the scientist] must try to make clear in his own mind just how far the concepts which he uses are justified, and are necessities."
(Einstein 1936)

Elective Courses:

Check the Academic Calendar for full requirements

Mathematics - one of:

- MATH 125 - Intro to Mathematical Methods in the Physical Sciences-I (3)
- MATH 126 - Intro to Mathematical Methods in the Physical Sciences-II (3)
- MATH 150 - Calculus I with Review (4)
- MATH 151 - Calculus I (3)
- MATH 152 - Calculus II (3)
- MATH 154 - Calculus I for the Biological Sciences (3)
- MATH 155 - Calculus II for the Biological Sciences (3)
- MATH 157 - Calculus I for the Social Sciences (3)
- MATH 158 - Calculus II for the Social Sciences (3)

Sciences - two of:

- BISC 101 - General Biology (4)
- BISC 102 - General Biology (4)
- CHEM 121 - General Chemistry and Laboratory I (4)
- CHEM 122 - General Chemistry II (2)
- CMPT 120 - Introduction to Computing Science and Programming I (3)
- CMPT 125 - Introduction to Computing Science and Programming II (3)
- EASC 101 - Dynamic Earth (3)
- EASC 210 - Historical Geology (3)

- ENSC 100 - Engineering Technology and Society (3)
- ENSC 100W - Engineering, Science and Society (3)
- ENSC 105W - Process, Form, and Convention in Professional Genres (3)
- GEOG 111 - Earth Systems (3)
- GEOG 213 - Introduction to Geomorphology (3)
- GEOG 214 - Weather and Climate (3)
- GEOG 215 - Biogeography (3)
- LING 100 - Communication and Language (3)
- LING 111 - Introduction to English Vocabulary Analysis (3) or LING 110
- LING 220 - Introduction to Linguistics (3)
- LING 221 - Introduction to Phonetics and Phonology (3)
- MACM 101 - Discrete Mathematics I (3)
- MACM 201 - Discrete Mathematics II (3)
- PHYS 101 - Physics for the Life Sciences I (3)
- PHYS 102 - Physics for the Life Sciences II (3)
- PHYS 120 - Mechanics and Modern Physics (3)
- PHYS 121 - Optics, Electricity and Magnetism (3)
- PSYC 100 - Introduction to Psychology I (3)
- PSYC 102 - Introduction to Psychology II (3)
- PSYC 100 - Introduction to Psychology I (3)
- PSYC 102 - Introduction to Psychology II (3)