

BACHELOR OF SCIENCE PHYSICAL SCIENCES MAJOR

2013/14 Academic Year

REQUIRED JUNIOR LEVEL COURSES¹

18 CREDITS

- 6 CREDITS** CHEM 101: University Chemistry I
 CHEM 102: University Chemistry II
- 6 CREDITS** EASC 101: Introduction to Physical Earth Science
 EASC 102: Environmental Earth Science²
 EASC 103: Historical Geology² [WINTER]
- 6 CREDITS** PHYS 108: University Physics I and PHYS 109: University Physics II
 PHYS 124: Particles and Waves and PHYS 126: Fluids, Fields, and Radiation
 PHYS 144: Newtonian Mechanics and Relativity and PHYS 146: Fluids and Waves

GENERAL SENIOR LEVEL COURSES

42 CREDITS

Please see planning notes on the back of this page for critical information about the structure of this major.

CHEMISTRY COURSES³

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| <input type="checkbox"/> CHEM 211: Analytical Chemistry I [FALL] | <input type="checkbox"/> CHEM 311: Advanced Chemical Analysis [FALL] |
| <input type="checkbox"/> CHEM 213: Analytical Chemistry II [WINTER] | <input type="checkbox"/> CHEM 333: Organometallic Chemistry [NOT OFFERED 2013/14] |
| <input type="checkbox"/> CHEM 241: Biophysical Chemistry [WINTER] | <input type="checkbox"/> CHEM 353: Forensic Chemistry [WINTER] |
| <input type="checkbox"/> CHEM 252: Introductory Forensic Science [FALL] | <input type="checkbox"/> CHEM 362: Advanced Organic Chemistry [FALL] |
| <input type="checkbox"/> CHEM 261: Organic Chemistry I [FALL/WINTER] | <input type="checkbox"/> CHEM 495: Special Topics in Chemistry ⁴ [NOT OFFERED 2013/14] |
| <input type="checkbox"/> CHEM 263: Organic Chemistry II [FALL/WINTER] | <input type="checkbox"/> CHEM 498: Independent Research ⁴ [FALL/WINTER] |
| <input type="checkbox"/> CHEM 270: Environmental Chemistry [FALL] | |
| <input type="checkbox"/> CHEM 291: Applied Spectroscopy [WINTER] | |

EARTH AND PLANETARY SCIENCE COURSES³

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| <input type="checkbox"/> EASC 206: Geology of the Solar System [FALL] | <input type="checkbox"/> EASC 320: Introduction to Geochemistry [NOT OFFERED 2013/14] |
| <input type="checkbox"/> EASC 208: Introduction to Global Change [FALL] | <input type="checkbox"/> EASC 321: Structural Geology [NOT OFFERED 2013/14] |
| <input type="checkbox"/> EASC 209: Geology of Western Canada [WINTER] | <input type="checkbox"/> EASC 324: Quaternary Environments [WINTER] |
| <input type="checkbox"/> EASC 219: Mineralogy [ODD FALL] | <input type="checkbox"/> EASC 334: Planetary Surface Imaging [FALL] |
| <input type="checkbox"/> EASC 221: Introduction to GIS and Remote Sensing [WINTER] | <input type="checkbox"/> EASC 373: Anthropogenic Global Warming [ODD WINTER] |
| <input type="checkbox"/> EASC 225: Introduction to Geomorphology [FALL] | <input type="checkbox"/> EASC 374: Sustainable Energy Development [EVEN WINTER] |
| <input type="checkbox"/> EASC 226: Soil Science [FALL] | <input type="checkbox"/> EASC 375: Paleoclimatology [NOT OFFERED 2013/14] |
| <input type="checkbox"/> EASC 230: Invertebrate Paleontology [FALL] | <input type="checkbox"/> EASC 495: Special Topics in Earth and Planetary Science ⁴ [NOT OFFERED 2013/14] |
| <input type="checkbox"/> EASC 238: Geology of Natural Resources [WINTER] | <input type="checkbox"/> EASC 498: Independent Research ⁴ [FALL/WINTER] |
| <input type="checkbox"/> EASC 270: The Atmosphere [WINTER] | |
| <input type="checkbox"/> EASC 294: Resources and the Environment [EVEN FALL] | |

PHYSICS COURSES³

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|---|--|
| <input type="checkbox"/> PHYS 200: Relative Aspects of Physics [FALL] | <input type="checkbox"/> PHYS 301: Nuclear Physics [WINTER] |
| <input type="checkbox"/> PHYS 208: Quantum Aspects of Physics [FALL] | <input type="checkbox"/> PHYS 308: Condensed Matter Physics [FALL] |
| <input type="checkbox"/> PHYS 212: Revolutions in Physics [WINTER] | <input type="checkbox"/> PHYS 320: Origins of Elements [FALL] |
| <input type="checkbox"/> PHYS 224: Thermal Physics [WINTER] | <input type="checkbox"/> PHYS 324: Origins of Planetary Systems [WINTER] |
| <input type="checkbox"/> PHYS 244: Mechanics [WINTER] | <input type="checkbox"/> PHYS 390: Advanced Physics Laboratory I [FALL] |
| <input type="checkbox"/> PHYS 250: Introduction to Biophysics [NOT OFFERED 2013/14] | <input type="checkbox"/> PHYS 391: Advanced Physics Laboratory II [FALL] |
| <input type="checkbox"/> PHYS 261: Physics of Energy [WINTER] | <input type="checkbox"/> PHYS 495: Special Topics in Physics and Astrophysics ⁴ [NOT OFFERED 2013/14] |
| <input type="checkbox"/> PHYS 281: Electricity and Magnetism [FALL] | <input type="checkbox"/> PHYS 498: Independent Research ⁴ [FALL/WINTER] |

➤ Important! Please see the back of this page for planning notes. ⚡

This planning sheet should be used only as a **guide** for course planning and it should be used in conjunction with the Bachelor of Science Degree Planner. Remember: not all courses listed are offered each year and course offerings are subject to change. In the event of a discrepancy between the information presented on this sheet and that available on myStudentSystem, the information on myStudentSystem will be considered accurate.

IMPORTANT PLANNING NOTES

1. Twelve credits from the prerequisite junior level courses can be used toward a student's core requirements. Additional credits will be placed in a student's options.
 - a. The Physical Sciences major requires students to take a high number of junior level credits. Physical Sciences majors must plan their options carefully to ensure that they do not exceed 48 junior level credits, which is the maximum number of junior level credits permitted in a Bachelor of Science degree.
2. Students who choose Earth and Planetary Sciences as one of their primary disciplines, and wish to pursue weather and climate studies should take **EASC 102**. Students who wish to pursue geology or planetary studies should take **EASC 103**.
3. The structure of the Physical Sciences major is as follows:

If a student chooses a Physical Sciences minor:

 - a. Students must choose two primary disciplines from Chemistry, Earth and Planetary Sciences, and Physics, and may choose the third discipline as their minor.
 - b. All senior credits in the third discipline will count only toward the minor.
 - c. Student must use only courses from their primary disciplines to complete the major's requirements, with a minimum of 18 senior level credits taken in each discipline.
 - d. Students must have 12 credits at the 300- or 400-level in their major, with at least three credits from each primary discipline.

If a student chooses a minor other than Physical Sciences:

 - a. Students must choose two primary disciplines from Chemistry, Earth and Planetary Sciences, and Physics.
 - b. Student must take 18 senior level credits in both of their primary disciplines to complete the major's requirements. An additional six senior level credits must be taken in the third discipline.
 - c. Students must have 12 credits in their primary disciplines at the 300- or 400-level in their major, with at least three credits from each primary discipline.

If a student chooses no minor:

 - a. Students must choose two primary disciplines from Chemistry, Earth and Planetary Sciences, and Physics.
 - b. Student must take 18 senior level credits in both of their primary disciplines to complete the major's requirements. An additional six senior level credits must be taken in the third discipline.
 - c. Students must have 12 credits in their primary disciplines at the 300- or 400-level in their major, with at least three credits from each primary discipline.
 - d. The 18 credits normally assigned to a minor will be considered options. Therefore, a student must complete 39 credits of options to be eligible for graduation.
 - e. Students must plan their options very carefully, as they can use a maximum of six credits in any Physical Sciences discipline within their options. Students also cannot exceed the 48 credit junior level maximum, and they must complete 72 credits of Science courses.
4. Students may take any of **CHEM 495**, **CHEM 498**, **EASC 495**, **EASC 498**, **PHYS 495** and **PHYS 498** for credit a maximum of two times, as long as the course topic is different each time they take it.