

Bachelor of Science - Physical Sciences Major 2011/2012 academic year

Total credits required for major = 42 senior-level credits (non-duplicative coursework)

Important Notes:

- 1) **TWO** of Chemistry, Earth and Planetary Science or Physics must be chosen as the primary disciplines at the senior level.
- 2) A minor is not required.
- 3) If the third discipline is chosen as a minor, all senior credits in that discipline will count only towards the minor and an additional 6 credits must be completed in senior level physical sciences courses.

Prerequisite Junior Courses (18 credits):

12 credits:

- CHEM 101: University Chemistry I
- CHEM 102: University Chemistry II
- EASC 100: Planet Earth
- EASC 105: The Dynamic Earth Through Time

6 credits from the following:

- PHYS 108: University Physics I
- PHYS 109: University Physics II
- PHYS 124: Particles and Waves
- PHYS 126: Fluids, Fields, and Radiation
- PHYS 144: Newtonian Mechanics and Relativity
- PHYS 146: Fluids and Waves

Note: These courses may be used to satisfy part of the Science Degree junior core requirements. Additional prerequisites may be required for other courses in this major. Please consult the course descriptions in the MacEwan calendar.

Senior-level Courses Satisfying Major Requirement (42 Credits)

42 credits from the following (choose **TWO** disciplines):

Notes: 18 senior level credits must be completed in each primary discipline declared.

A minimum of 12 credits must be completed at the 300 or 400 level in the primary disciplines with at least 3 credits from each primary discipline.

6 senior level credits must be completed from the third discipline. **(see note 3 above)

Physics Courses

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|--|---|
| <input type="checkbox"/> PHYS 200: Relative Aspects of Physics | <input type="checkbox"/> PHYS 308: Condensed Matter Physics |
| <input type="checkbox"/> PHYS 208: Quantum Aspects of Physics | <input type="checkbox"/> PHYS 320: Astrophysics of Stars |
| <input type="checkbox"/> PHYS 212: Revolutions in Physics | <input type="checkbox"/> PHYS 322: Astrophysics of Galaxies |
| <input type="checkbox"/> PHYS 224: Thermal Physics | <input type="checkbox"/> PHYS 390: Advanced Physics Laboratory I |
| <input type="checkbox"/> PHYS 244: Mechanics | <input type="checkbox"/> PHYS 391: Advanced Physics Laboratory II |
| <input type="checkbox"/> PHYS 261: Physics of Energy | <input type="checkbox"/> PHYS 472: Quantum Mechanics |
| <input type="checkbox"/> PHYS 281: Electricity and Magnetism | <input type="checkbox"/> PHYS 495: Special Topics in Physics and Astrophysics I |
| <input type="checkbox"/> PHYS 301: Nuclear Physics | |

Earth and Planetary Science Courses

- | | |
|---|--|
| <input type="checkbox"/> EASC 206: Geology of the Solar System | <input type="checkbox"/> EASC 294: Resources and the Environment |
| <input type="checkbox"/> EASC 208: Introduction to Global Change | <input type="checkbox"/> EASC 320: Introduction to Geochemistry |
| <input type="checkbox"/> EASC 209: Geology of Western Canada | <input type="checkbox"/> EASC 321: Structural Geology |
| <input type="checkbox"/> EASC 221: Introduction to GIS and Remote Sensing | <input type="checkbox"/> EASC 324: Quaternary Environments |
| <input type="checkbox"/> EASC 224: Mineralogy | <input type="checkbox"/> EASC 334: Planetary Surface Imaging |
| <input type="checkbox"/> EASC 225: Introduction to Geomorphology | <input type="checkbox"/> EASC 373: Anthropogenic Global Warming |
| <input type="checkbox"/> EASC 226: Soil Science | <input type="checkbox"/> EASC 374: Sustainable Energy Development |
| <input type="checkbox"/> EASC 230: Invertebrate Paleontology | <input type="checkbox"/> EASC 375: Paleoclimatology |
| <input type="checkbox"/> EASC 238: Geology of Natural Resources | <input type="checkbox"/> EASC 495: Special Topics in Earth and Planetary Science |
| <input type="checkbox"/> EASC 270: The Atmosphere | <input type="checkbox"/> EASC 498: Independent Research in Earth and Planetary Science |

Chemistry Courses

- | | |
|--|--|
| <input type="checkbox"/> CHEM 211: Analytical Chemistry I | <input type="checkbox"/> CHEM 283: Chemical Energetics |
| <input type="checkbox"/> CHEM 213: Analytical Chemistry II | <input type="checkbox"/> CHEM 291: Applied Spectroscopy |
| <input type="checkbox"/> CHEM 231: Main-Group Chemistry | <input type="checkbox"/> CHEM 311: Advanced Chemical Analysis |
| <input type="checkbox"/> CHEM 233: Transition-Metal Chemistry | <input type="checkbox"/> CHEM 353: Forensic Chemistry |
| <input type="checkbox"/> CHEM 241: Biophysical Chemistry | <input type="checkbox"/> CHEM 362: Advanced Organic Chemistry |
| <input type="checkbox"/> CHEM 252: Introductory Forensic Science | <input type="checkbox"/> CHEM 383: Chemical Kinetics and Dynamics |
| <input type="checkbox"/> CHEM 261: Organic Chemistry I | <input type="checkbox"/> CHEM 495: Special Topics in Chemistry |
| <input type="checkbox"/> CHEM 263: Organic Chemistry II | <input type="checkbox"/> CHEM 498: Independent Research in Chemistry |
| <input type="checkbox"/> CHEM 282: Computational Chemistry | |

Note: Not all courses listed are offered each year.