MacEwan UNIVERSITY

FACULTY OF ARTS AND SCIENCE

Bachelor of Science
Physical Sciences Major

2020/21 Academic Year

The Physical Sciences Major is comprised of three disciplines – chemistry, Earth and planetary sciences, and physics. Students select courses in each of the three disciplines. While students in this major are not required to complete a minor, if any of chemistry, Earth and planetary sciences, and physics are chosen as a minor, all senior-level credits in that discipline will only count toward the minor. Please refer to Planning Note 3 for more information on the structure of the Physical Sciences Major.

This planning sheet combines the course work for the major as well as other elements of the Bachelor of Science program. The degree is 120 credits, or 40 courses. Thus there is a check box of every course required for the major and the degree.

Requirements for the Major include:

- ☐ 60-72 non-duplicative credits
- ☐ A minimum of 42 senior-level credits
- ☐ A minimum of 12 credits at the 300- or 400-level in the primary disciplines
- ☐ A minimum of 3 credits at the 300- or 400-level in each primary discipline

Specific Major Requirements — 18 Credits

Chemistry

☐1 CHEM 101 Introductory University Chemistry I
☐2 CHEM 102 Introductory University Chemistry II

Earth and Planetary Sciences:

☐3 EASC 101 Introduction to Physical Sciences
☐4 EASC 102 Intro to Environmental Earth Science

Choose 6 credits from the following Physics:

PHYS 124	Physics for Life Science I	PHYS 126	Physics for Life Science II
PHYS 144	Mechanics	PHYS 146	Electromagnetism

☐5 PHYS _____ ☐6 PHYS _____

Minimum General Major Requirements — 42 Credits

Primary Discipline I - 18 senior-level credits from the first primary discipline

☐7 _____ ☐8 _____ ☐9 _____
☐10 _____ ☐11 _____ ☐12 _____

Primary Discipline II - 18 senior-level credits from the second primary discipline

☐13 _____ ☐14 _____ ☐15 _____
☐16 _____ ☐17 _____ ☐18 _____

General Requirements – 6 senior-level credits from the third discipline

☐19 _____ ☐20 _____

Other Major, Minor, Breadth, and Option Requirements — 60 Credits

May include up to 12 additional credits in CHEM, EASC, PHSC, and PHYS; Minor Requirements; and Options.

☐21 _____ ☐22 _____ ☐23 _____
☐24 _____ ☐25 _____ ☐26 _____
☐27 _____ ☐28 _____ ☐29 _____
☐30 _____ ☐31 _____ ☐32 _____

Breadth Exit Requirements

Breadth requirements cover a number of disciplines and are designed to broaden your horizons and extend your skills. Unless otherwise specified, these courses can be taken at any level and completed in any combination. Courses that count towards the major and options can also be used to fulfill the breadth requirements.

Chemistry or Physics - 6 credits (fulfilled with Specific Major Requirements)

Biological or Earth and Planetary Sciences - 6 credits (fulfilled with Specific Major Requirements)

Continued on next page

Mathematical Sciences - 3 credits from one of MATH 114, MATH 120, or MATH 125 **and** 3 credits from MATH, CMPT or STAT (not including CMPT 104, MATH 099, MATH 160, or MATH 170)

☐33 _____ ☐34 MATH 114, 120 or 125

English - ENGL 102 and 3 credits in university ENGL (not including ENGL 108 or 111 or 211)

☐35 ENGL 102 ☐36 ENGL _____

Humanities - 6 credits in CLAS, COMP, HIST, HUMN, PHIL, or a language other than English

☐37 _____ ☐38 _____

Social Sciences - 6 credits in ANTH, ECON, POLS, PSYC, SOCI

☐39 _____ ☐40 _____

Important Planning Notes

1. Courses required for the major may be used to satisfy the breadth requirements in the Bachelor of Science degree.
2. Students are required to consult the MacEwan University academic calendar to ensure they meet prerequisites for all courses they enrol in.
3. The structure of the Physical Sciences major is as follows:

   If a student chooses a minor in one of the Physical Sciences disciplines:

   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 primary disciplines, with at least three credits from each primary discipline.

   If a student chooses a minor other than in one of the Physical Sciences disciplines:

   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 primary disciplines, 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 primary disciplines, 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 36 credits of options to be eligible for graduation.
4. **PHSC 200** is a Physical Sciences course that covers material relevant to Chemistry, Earth and Planetary Sciences, and Physics. It can be used toward a student's Chemistry, Earth and Planetary Sciences, or Physics requirements, but while it may be applied to any of these requirements, students can only receive credit for the course one time.

- Because the Physical Sciences major is not a discipline-specific major, **PHSC 200** can count toward a student's major. If it is taken outside the student's major, it will count toward that student's maximum of 12 major credits in their options.

5. *Engineering students who have successfully completed CHME 103, CHME 105, PHYS 130, ENPH 131 will have the equivalents of CHEM 101, CHEM 102, PHYS 144 and PHYS 146. See an advisor for full details.
6. Please keep in mind that course offerings will vary from academic year to academic year.

Degree Regulations

- ☐ A minimum 120 credits of non-duplicative coursework
- ☐ A minimum of 60 credits completed at MacEwan University
- ☐ A maximum of 48 credits at the 100-level
- ☐ A minimum of 72 credits in Science courses
- ☐ A maximum of 15 credits of out-of-faculty options with no more than 3 credits in PACT
- ☐ *The maximum number of credits for independent work (project, field placement, and/or individual study courses) excluding the honours thesis is 15 credits. Specific disciplines may have further restrictions.

Physical Sciences Offerings

Please refer to the academic calendar or MacEwan.ca/Science > Disciplines > Physical Sciences for further information regarding course offerings.