

Calendar Year: 2004-2005
Faculty: Arts & Science/Education

Bachelor of Science/Bachelor of Education

Biological Sciences/Science Education

The Department of Biological Sciences

The Department of Biological Sciences offers a major in Biological Sciences, with possible emphasis on one of several fields, including Biology, Botany, Cell Biology, Ecology, Evolutionary Biology, Molecular Biology and Zoology, and supports courses for a number of pre-professional transfer programs. With other Departments, the Department of Biological Sciences jointly offers instruction leading to multidisciplinary majors in Agricultural Biotechnology, Agricultural Studies, Biochemistry and Environmental Science and Post-Diploma programs with majors in Agricultural Studies and Environmental Science. Also, special individual programs may be developed in Psychobiology and other related fields.

If you plan to major in Biological Sciences, come and talk about your plans with a Faculty member. You should see the Department Chair, who will assign you to a Faculty member for advising. You should consult an Arts and Science or Education Advisor on full degree requirements for courses outside Biology.

Choosing an Education Major

The Faculty of Education offers 11 different majors that correspond to teaching subjects in Alberta schools. Admission is based on those majors, and you will be competing with other students in your major to gain entry to the Faculty. After you are admitted to the Faculty, you will work closely with a Faculty member in your major, particularly in Professional Semester II when student teachers work primarily in their subject area.

How do you choose an education major? Generally, students consider their favourite subject areas in which they did well at school. Your education major will be closely related to the major in your other degree, so you will also want to consider the areas of interest and expertise that you have developed in the university courses taken so far. For many

students, this is an easy decision — but if you are uncertain, try taking the introductory courses in several areas. Advisors are also excellent resources to help you explore your options.

You are encouraged to consider in your pre-Combined Degrees program the type of courses and background that will prepare you for teaching in a variety of situations. Many students find that their early objective to teach only at the elementary level or at the secondary school level is later modified or sometimes completely changed. It is therefore wise to select courses that will prepare you not only with breadth and richness for the classroom but may also provide the basis for the development of a teaching minor.

Program Planning Guide

University of
Lethbridge



This program guide is designed to help you plan your degree program. The information should help you keep track of your progress in your major, electives and all your degree requirements. Please remember that this is only a guide and not a graduation check. Students are responsible for the accuracy of their own programs. The guide should be used in conjunction with the University of Lethbridge Calendar, which is the final authority on all questions regarding program requirements and academic regulations.

Current and past Program Planning Guides are available on the UofL website at:
http://www.uleth.ca/reg/ro_quick_links.html

REQUIREMENTS FOR THE BIOLOGICAL SCIENCES/SCIENCE EDUCATION MAJOR

The Program

The B.Sc./B.Ed. combined degrees with a major in Biological Sciences/Science Education require a minimum of 50 courses, including 30 in Arts and Science and 20 in Education. A minimum of 13 courses (10 courses in Biological Sciences plus 3 cognates) is required in the Biological Sciences major. A maximum of 17 courses in Biological Sciences (including courses labelled Botany and Zoology prior to 1999/2000) is allowed.

Transfer Credit

Remember that you may use both University of Lethbridge credit and credit transferred from another college or university to meet degree and major requirements. Transfer credit may be either specified or unspecified. Specified credit is indicated on your transcript by the subject name and the specific number of the course, e.g., Biology 1010, Biology 3300, etc. Unspecified credit (1XXX, 3XXX, etc.) is indicated by the subject name and level of the course in parentheses, e.g., Biology (1000 level), Biology (3000 level), etc.

Unspecified course credit means that the University of Lethbridge does not offer the same course you transferred in, but we recognize it and treat it as a regular course. An unspecified course would count as one of your maximum of 17 from one department, but it could not meet a specific course requirement. For example, if Biology 2000 is required in your program, you could not use Biology (2000 level) to fulfill that requirement.

How do I use the guide?

When you have met one of the requirements, place a check mark beside it. When all the requirements are checked, you should have completed the major.

- _____ 1. Biology 1010 - Cellular Basis of Life
- _____ 2. Biology 1020 - Diversity of Life
- _____ 3. Biology 2000 - Principles of Genetics
- _____ 4. Biology 2200 - Principles of Ecology
- _____ 5. Biology 3300 - Evolution
- _____ 6-10. TWO courses (6.0 credit hours) from two of Cellular and Molecular Biology, Organismal Biology, or Ecology and Evolutionary Biology, plus a minimum of one course in the third area:

List 1: Cellular and Molecular Biology (BIOL 3000, 3110, 3200, 4100, 4110, 4170, 4200)

List 2: Organismal Biology (BIOL 3310, 3410, 3420, 3460, 3520, 3530, 3560, 4560)

List 3: Ecology and Evolutionary Biology (BIOL 3600, 3610, 3620, 3630, 3700, 4600, 4770, 4800)

- _____ Of the five courses listed in requirements 6-10 above, at least one must be at the 4000 level:

_____ 11-13. In addition, THREE courses (9.0 credit hours) in cognate disciplines are required:

_____ 1. One Chemistry course (3.0 credit hours). Chemistry 2100 - Elements of Organic Chemistry I is recommended.

_____ 2. ONE of:

_____ Physics 1000 - Introduction to Physics I

_____ Physics 1050 - Introduction to Biophysics (preferred)

_____ 3. One course in Computer Science, Mathematics or Statistics

_____ Additional recommended course:

_____ Environmental Science 2000 - Fundamentals of Environmental Science

Note: Only one of Biology 1010 and Biology 1020 will be counted towards the limit of eight introductory courses for the B.Sc. portion of the B.Sc./B.Ed. program.

If you have questions regarding the Combined Degrees Biological Sciences/Science Education major, you should contact one of the Department Advisors.

Co-operative Education in the Sciences

A Co-op option, requiring three work terms, is available. Students interested in the Co-operative Education/Internship program should contact the Coordinator of Co-operative Education in the Career Resources Centre (B610; tel. 403-382-7154) for further information.

ADVICE FROM THE DEPARTMENT

Students interested in emphasizing cell and molecular biology or ecology should consult with the Department of Biological Sciences regarding course sequencing and selection.

Independent Studies: Many opportunities exist for interaction with Faculty members in their research programs, through Independent Study and Summer work. All such interactions provide valuable experience and insights into the various fields of biological research. You are encouraged to seek out these opportunities, especially if you are interested in pursuing graduate studies. The Department of Biological Sciences issues a brochure on Independent Studies that is available from the Department Secretary.

ADVICE FROM THE FACULTY OF EDUCATION

Students may complete an Education minor and/or specialization in addition to the major. The Faculty of Education offers 19 minors and 3 specializations (Early Childhood Education, Special/Inclusive Education, and Technology in Education). A minor consists of five non-Education courses and one curriculum and instruction Education course. Students may use the same courses to fulfill minor and General Liberal Education requirements. The specializations consist of four courses and corresponding Professional Semester III focus. Completing a minor and/or a specialization allows students to develop expertise in a second area of teaching and be more versatile and marketable as a graduating teacher. For more information on the Education specialization and the minor, see the **2004-2005 University of Lethbridge Calendar, Part 13 - Combined Degrees, Section 3.e. (p. 220) and 3.f. (p. 220).**

SAMPLE COURSE SEQUENCING PLAN

B.Sc./B.Ed. - BIOLOGICAL SCIENCES/SCIENCE EDUCATION

Shown below is a sample sequence of courses for your degree. If you follow this plan, you should be able to graduate in five years, provided you complete five courses per semester. This is just one example of how you could complete your major and degree requirements; you may find that a different sequence works as well as this one.

TERMS USED

GLER course: A course that could count toward the General Liberal Education Requirement. You may use courses in your major towards this 12-course requirement. See the 2004-2005 University of Lethbridge Calendar, Part 4 - Academic Regulations (pp.77-80) for complete information.

Elective: A course that you may choose freely from all those available and applicable to your program. Use courses inside or outside your major, bearing in mind any restrictions that may apply (e.g., a maximum of 17 courses from any one department).

Cognate: A course from a related discipline deemed to complement the chosen area of study and to encompass knowledge and skills essential to that area.

YEAR ONE	FALL	SPRING
	Biology 1010 Chemistry 1000 (recommended) Physics 1050 (recommended as required cognate) GLER course GLER course	Biology 1020 Environmental Science 2000 (recommended) GLER course GLER course GLER course
YEAR TWO	FALL	SPRING
	Biology 2000 Biology 2200 Chemistry 2100 (recommended as required cognate) Education 2500** GLER course	Biology 3300* Biology elective One course in Computer Science, Mathematics or Statistics (required cognate) GLER course GLER course
YEAR THREE	FALL	SPRING
	Professional Semester I	Biology elective Elective 3000/4000 level Elective 3000/4000 level Elective Elective
YEAR FOUR	FALL	SPRING
	Biology elective Biology elective Elective 3000/4000 level Elective Elective	Professional Semester II
YEAR FIVE	FALL	SPRING
	Professional Semester III	Biology 4000-level elective Education Foundation course Education elective Education elective Education elective

Elementary Education and Special/Inclusive Education students will reverse these two semesters and complete PS III in the Spring.

* Semester of offering of Biology 3300 may vary. Please check with the Department of Biological Sciences.

** Education 2500 may also be taken in Spring and Summer Semester.

