

# 4-Year Bachelor of Science Mathematics



## Program Planner 2013-2014

While your degree planning is directed by the specific requirements for your chosen major and minor, it is also driven by your own personal interests; therefore, it is most effective when you are the master of your own academic planning.

Please be aware of all prerequisites, corequisites, and other registration regulations for all courses required within your degree. Program planning can be very effective to identify potential courses needed in addition to specific requirements. Refer to section 4.0 in the *Concordia Calendar* for more information regarding registration policies.

Please remember that you are responsible for registering in and completing the courses necessary to obtain your degree. The *Concordia Calendar* is the final authority regarding program requirements and academic regulations.

Use this *guide* and a *Degree Checklist* in conjunction with your *Concordia Calendar* (which is the best resource for answers to your questions).

## Background Information

Problem solving is a daily task in our lives. Mathematics embodies the art of problem solving and is, therefore, one of the central sciences in all human intellectual activity. At Concordia, we teach you to appreciate the beauty and elegance of mathematical thinking and expression. We give you the opportunity to develop the fundamental tools of the science and the techniques required to synthesize and analyze information correctly. We introduce you to a variety of mathematical disciplines and encourage you to participate in the development of mathematical concepts, methods and procedures. The use of state-of-the-art computer algebra systems is an integral part of learning and doing Mathematics at Concordia.

The Mathematics Department at Concordia offers a wide range of courses from Calculus and Linear Algebra to Mathematical Modelling, Game Theory, Combinatorics, Advanced Abstract Algebra, and Analysis.

The 4-year Mathematics program gives you the appropriate background for career options such as: Accountant, Actuary, Aerospace Engineer, Appraiser, Auditor, Bank Officer, Cartographer, Financial Consultant, IT Consultant, Market Research Analyst, Surveyor, Statistician, or Teacher. It also provides the necessary training for graduate programs in Mathematics.

Faculty members in the Mathematical and Computing Sciences Department, [Professor William Freed](#), [Dr. Andreas J. Guelzow](#), [Dr. Rossitza Marinova](#), and [Dr. A. N. Tom Tavouktsoglou](#), are good resources for more information about the Mathematics degree program.

**Department Website:** <http://math.concordia.ab.ca/>

## Core Requirements

English/Writing: 9 credits

- ENG 100 or 111 and 112; and senior-level English or Writing

Religious Studies: 6 credit minimum

- See *Religious Studies Residency Requirement*, section 4.2.3 of the Concordia Calendar

Natural Science with Lab: 6 Credits

- Biology, Biology/Environmental Science, Chemistry, Earth Science, Environmental Science, or Physics courses which contain a three-hour lab component

Social Science: 6 credits

- Economics, History, Political Science, Psychology, or Sociology

Mathematics: 9 credits in Mathematics, Computing Science, or Information Technology; with a minimum 6 credits in Mathematics

**Note:** Core course requirements may be fulfilled through both major and minor requirements; however, the same course may not be counted toward both major and minor requirements. (Example: courses taken toward a History minor simultaneously fulfills Social Science core).

## Major Requirements

**45-60 credits required to include:**

- MAT 113 or 114
- MAT 115, 120, and 151
- MAT 200, 214, 215, 223, and 224
- MAT 331
- MAT 400 and 401
- One of MAT 421, 422, or 424
- MAT 441 or 442
- MAT 491 or 492
- 0-15 credits of unspecified senior-level Mathematics courses; MAT 402 is strongly recommended.

## Sample Program

Below is a sample sequence of courses for your degree. Keep in mind that this is only an example; you may find that a different sequence works best for you.

**Note:** The 4-year Bachelor of Science degree requires 66 credits in Faculty of Science. The Science Electives in the planner below are for Mathematics majors who have a Faculty of Arts minor. It is strongly recommended that Mathematics Majors include some Computing Science and Information Technology courses in their program.

	Fall Semester	Winter Semester
Year 1	ENG 100 or 111 MAT 113 or 114 MAT 200 Minor Social Science	ENG 100 or 112 MAT 115 MAT 120 REL 101 or 150 Social Science
Year 2	MAT 151 MAT 214 Minor Natural Science with Lab Science Elective	MAT 223 MAT 215 REL Natural Science with Lab Science Elective
Year 3	Senior ENG or WRI MAT 331 Science Elective Science Elective Minor	MAT 224 MAT 421†, 422, or 424‡ MAT 441 or 442 REL Minor
Year 4	MAT 400 MAT 401 Minor Science Elective Elective Elective	MAT 400 MAT 491 or 492 Social Science Elective Elective

† To partially fulfill **MAT 421** prerequisites, MAT 321 is recommended to be taken in place of the Science Elective in Year 3 or 4, Fall Semester.

‡ To partially fulfill **MAT 424** prerequisites, IT 102 or CMPT 112 and one of its prerequisite are recommended to be taken in Year 2 or 3 as a Science Elective