3-Year Bachelor of Science Mathematics

Program Planner 2012-2013

While your degree planning is directed by the specific requirements for your chosen concentration 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, which embodies the art of problem solving, is therefore one of the central sciences in all human intellectual activity. At Concordia University College of Alberta, we teach you to appreciate the beauty and elegance of mathematical thinking and expression. You learn the fundamental tools of the science, and develop techniques required to correctly synthesize and analyze information. We 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.

You may take courses ranging from Calculus and Linear Algebra to Mathematical Modelling, Game Theory, Combinatorics, Advanced Abstract Algebra, and Analysis.

The Mathematics program can lead to career options such as: Accountant, Actuary, Aerospace Engineer, Appraiser, Auditor, Bank Officer, Cartographer, Financial Consultant, IT Consultant, Market Research Analyst, Surveyor, Statistician, or Teacher.

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

Core Requirements

English/Writing: 9 credits
- ENG 100 or 110; and senior-level English or Writing

Religious Studies: 6 credits minimum
- REL 101 or 150; and at least 3 additional credits in Religious Studies
  See also Religious Studies Residency Requirement, section 4.2.3 of the Concordia Calendar

Natural Science with Lab: 6 credits
- Any 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

Mathematical and/or Computing Sciences: 6 credits
- Mathematics, Computing Science, or Information Technology

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

Concentration Requirements

27-33 credits required to include:

a) MAT 113 or 114
b) MAT 115, 120, and 151
c) MAT 200, 214 and 223
d) MAT 331
e) One 400-level Mathematics course
f) 0-6 credits of unspecified senior-level Mathematics courses

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 3-Year Bachelor of Science degree requires a minimum 42 credits in Faculty of Science coursework. The Science Electives in the planner below are for Math Concentrations who have a Faculty of Arts Minor.

	Fall Semester	**Winter Semester**
Year 1	ENG 100 or 110 MAT 113 or 114 MAT 151 Minor Social Science	ENG 100 or 110 MAT 115 MAT 120 REL 101 or 150 Social Science
Year 2	MAT 214 MAT 200 Minor Natural Science with Lab Science Elective	MAT 223 Minor REL Natural Science with Lab Science Elective
Year 3	MAT 331 ENG or WRI Science Elective Minor Minor	MAT (400-level)* Senior REL Elective Elective Minor

*   Be aware of the prerequisites required for your 400-level math course and plan ahead to ensure that you have taken the necessary prerequisite course(s).

Minors 2012-2013

1. **Biochemistry: 18-21 credits required to include:**
   - (a) BES 107
   - (b) CH 261
   - (c) BIOCH 200
   - (d) BIOCH 350
   - (e) 6-9 credits of unspecified Biochemistry courses

   In addition to the above courses students must complete:
   - (f) CH 101
   - (g) CH 102

2. **Biology:** 18-24 credits required to include:
   - (a) BES 107 and 108
   - (b) 12-18 credits unspecified senior-level Biology or Biology/Environmental Science courses

3. **Business:** 18-24 credits required to include:
   - (a) BUS 110
   - (b) BUS 120
   - (c) ECO 101 and 102
   - (d) One of BUS 112, MAT 151, PSY 211, or SOC 210
   - (e) 3-9 credits of unspecified Accounting, Business, Finance, Human Resource Management, Leadership, Management and Marketing courses

4. **Canadian Studies:** 18-24 credits required to include 6 credits each from three of the four general areas of study listed below with at least 6 credits at the senior level:
   - (a) ENG 381, ENG 382, ENG 383, ENG 384, FR 250, FR 300, NS 152
   - (b) HIS 260, HIS 261, HIS 365, HIS 366, HIS 415, HIS 416
   - (c) BUS 110, ECO 101, ECO 102, ECO 218, ECO 219, ECO 341, ECO 369, PSCI 220, MARK 201
   - (d) SOC 101, SOC 204, SOC 271, SOC 327, SOC 368, SOC 369, SOC 376

5. **Career Development:** 18-24 credits required to include:
   - (a) CDV 200
   - (b) CDV 201
   - (c) CDV 300
   - (d) CDV 302
   - (e) 3-9 credits chosen from CDV 303, 304, 305, and 306

6. **Chemistry:** 18-24 credits required to include:
   - (a) CH 101 and 102
   - (b) 12-18 credits of unspecified Chemistry courses with at least 6 credits at the senior level (may include BIOCH 200)

7. **Drama:** 18-24 credits required, with at least 6 credits at the senior-level, to include:
   - (a) DRA 101 or 102
   - (b) One of DRA 149, 325 or 353
   - (c) One of DRA 247 or 352
   - (d) 9-15 credits of unspecified Drama courses

8. **Economics:** 18-24 credits required to include:
   - (a) ECO 101 and 102
   - (b) 12-18 credits of unspecified senior-level Economics courses

9. **Education:** 18-24 credits required, with at least 9 credits at the senior level, to include:
   - (a) ED 199
   - (b) EDPS 200
   - (c) One of CMPT 111, IT 101, or MAT 102
   - (d) 3-6 credits chosen from ENG 399, HIS 261, MUED 213, or MUED 214
   - (e) 3-6 credits chosen from DAN 340, PESS 101, PESS 201, PESS 245, PESS 293, PAC 111, PAC 118, PAC 131, PAC 135, PAC 137, or PAC 181
   - (f) EDFD 341 or EDPS 341
     Note: Students interested in Concordia's Bachelor of Education (After Degree) in Elementary Education should consult the admission requirements, section 3.4.1

10. **English:** 18-24 credits required to include:
    - (a) ENG 100 or 110
    - (b) 12-18 credits of unspecified senior-level English courses

11. **Environmental Science:** 18-24 credits required to include:
    - (a) BES 107 and 108
    - (b) ENSC 204
    - (c) BES 208
    - (d) 6-12 credits of unspecified senior-level Environmental Science courses

12. **Forensic Studies:** 18-24 credits required to include:
    - (a) PSY 350, 433, and 452
    - (b) SOC 224, 321 or 377
    - (c) SOC 225 and 327
    - (d) 0-6 credits of courses listed above
      Note: Open only to students in the four-year Bachelor of Arts in Psychology (Applied Emphasis) program

13. **French:** 18-24 credits required to include:
    (a) FR 203
    (b) FR 250
    (c) FR 303 and 312
    (d) 0-6 credits of unspecified French courses
14. **History:** 18-24 credits required to include:
    (a) Unspecified History courses with at least 6 credits at the senior level
15. **Information Technology and Computing Science:** 18-24 credits required to include:
    (a) Unspecified Information Technology and/or Computing Science courses with a maximum of 9 credits at the junior level.
16. **Mathematics:** 18-24 credits required to include:
    (a) MAT 113 or 114
    (b) MAT 115, 120, and 151
    (c) MAT 200
    (d) 3-9 credits of unspecified senior-level Mathematics courses
17. **Music:** 18-24 credits required to include:
    (a) MUS 211
    (b) MUS 261, 281, 282 or 380-series
    (c) 3 credits of unspecified MUP courses
    (d) 9-15 credits of unspecified MUS or MUP courses, at least 6 of which must be MUS courses and at least 6 of which must be at the senior-level
18. **Parish Services:** 18-24 credits required to include:
    (a) EDPS 200
    (b) PS 301, 302, and 303
    (c) 6-12 credits chosen from PS 288, 304, 444, or 445
        Note: These requirements are for a Parish Services minor as part of any program except Religious Studies (Applied Emphasis). For that combination see 10.1.1D.5
19. **Philosophy:** 18-24 credits required to include:
    (a) PHIL 102 or 202
    (b) PHIL 125
    (c) 12-18 credits of unspecified Philosophy courses with at least 9 credits at the senior level
20. **Physical Education and Sport Studies:** 18-24 credits required to include:
    (a) PESS 101
    (b) 6 credits chosen from PESS 201, PESS 245, or SOC 230.
    (c) 6 credits chosen from Physical Activity and/or Physical Activity Team courses with at least two different activities
    (d) 3-9 credits chosen from DAN 340, PESS 293, Physical Activity, and/or Physical Activity Team courses
21. **Physics:** 18-24 credits required to include:
    (a) One of PHY 111, 121 or 131
    (b) PHY 122 or 132
    (c) PHY 204 or 281
    (d) PHY 211
    (e) PHY 301 and 302
    (f) 0-6 credits of unspecified senior-level Physics courses
22. **Political Science:** 18-24 credits required to include:
    (a) PSCI 101, 102, and 220
    (b) 6-12 credits of unspecified senior-level Political Science courses
23. **Pre-Seminary:** 18-24 credits required to include:
    (a) GRK 101 and 102
    (b) HEBR 101 and 102
    (c) MUS 261 or 262
    (d) PS 302 or 445
    (e) 0-6 credits chosen from DRA 352, PS 288, PS 301, PS 304, PHIL 125, or 3 credits of unspecified Philosophy
24. **Psychology:** 18-24 credits required to include:
    (a) PSY 104 and 105
    (b) 12-18 credits of unspecified senior-level Psychology courses
25. **Religious Studies:** 18-24 credits required to include:
    (a) REL 101 or 150
    (b) 15-21 credits of unspecified Religious Studies courses, with a maximum of 3 credits at the junior level
26. **Sociology:** 18-24 credits required to include:
    (a) SOC 100
    (b) 15-21 credits of unspecified Sociology courses with at least 6 credits at the senior level