**MATHEMATICS MINOR PROGRAM REQUIREMENTS**

**A) LOWER DIVISION REQUIREMENTS (100/200 LEVEL)**

Students complete at least 12 MATH or MACM units (excluding MATH 100, 190, 197 or 198). These 12 credits must include:

- Calculus I (MATH 150, 151, 154 or 157)
- Calculus II (MATH 152, 155, or 158)
- Linear Algebra (MATH 232 or 240)
- An additional 100 or 200 level MATH or MACM course (excluding MATH 100, 190, 197 or 198)
  - Courses commonly taken to fulfill this requirement include MACM 101, MACM 201, MATH 208W, or MATH 251. When selecting the additional course, it is a good idea to think ahead and consider which course you may need as a prerequisite for upper division (300/400 level) MATH/MACM courses.

Students may use the same lower division course to fulfill program requirements for a major program and a minor program.

**B) UPPER DIVISION REQUIREMENTS (300/400 LEVEL)**

Students complete at least 15 upper division units of MATH and/or MACM courses.

Students may not use the same course to satisfy the upper division program requirements for a major program and a minor program.

**ADDITIONAL INFORMATION**

- **Recommended Upper Division Math Minor Courses**
  Please note that math minor students are recommended to enroll in the MATH 30X courses (MATH 301, 302, 303, 304). For additional recommendations, please turn to the next page.

- **Important Websites**
  - Math course promos and descriptions: http://www.sfu.ca/math/undergraduate/coursepromosanddescriptions.html
  - Math projected course offerings: https://www.sfu.ca/math/undergraduate/calendarandprojectedofferings.html
  - Math events and opportunities: http://www.sfu.ca/math/undergraduate/explore.html

- **For additional information regarding mathematics programs at SFU, please contact:**
  Bryant Kamlade
  Undergraduate Advisor
  Department of Mathematics
  Email: math_advice@sfu.ca
  Telephone: 778.782.4980
  http://www.math.sfu.ca/

***It is the responsibility of each student to be aware of faculty regulations as stated in this Calendar. Departmental and faculty advisors and staff are available for advice and guidance. However, the ultimate responsibility for completeness and correctness of course selection, for compliance with and completion of program and degree requirements and for observance of regulations and deadlines rests with the student.***
RECOMMENDED MATH MINOR COURSES

Please note that a course must be 300-level or 400-level to count for credit for the Mathematics Minor upper division requirements.

Education Majors and Prospective SFU PDP Students*
MATH 301 – Mathematical Journeys I
MATH 302 – Mathematical Journeys II
MATH 303 – Mathematical Journeys III
MATH 304 – Mathematical Journeys IV
MATH 342 – Elementary Number Theory
MATH 380W – History of Mathematics
MATH 381W – Mathematics Undergraduate Seminar
STAT 270 – Introduction to Probability and Statistics
MACM 101 – Discrete Mathematics I
MACM 201 – Discrete Mathematics I

Students with an interest in computing may also consider:
• MACM 203 – Computing with Linear Algebra
• MACM 204 – Computing with Calculus

* SFU Professional Development Program or UBC Teacher Education Program:
Please check the admission requirements with these programs directly.

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Physics Majors*
*Students pursuing a Physics Major cannot take MATH 310 for credit towards a Mathematics Minor as this course is needed to fulfill the Physics Major requirements.

MATH 314 – Introduction to Fourier Methods and Partial Differential Equations
MATH 418 – Partial Differential Equations
MATH 461 – Continuous Mathematical Models
MATH 462 – Fluid Dynamics
MATH 467 – Dynamical Systems
MATH 470 – Variational Calculus

Statistics Majors
MATH 310 – Introduction to Ordinary Differential Equations
MACM 316 – Numerical Analysis I
MATH 380W – History of Mathematics

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RECOMMENDED MATH MINOR COURSES

Business Majors

MATH 208W – Introduction to Operations Research
MATH 308 – Linear Optimization
MATH 309 – Continuous Optimization
MATH 348 – Probabilistic Models in Operations Research

Business students may also want to consider taking STAT 270 in lieu of BUEC 232 for the Business requirements.

Economics Majors

MATH 308 – Linear Optimization
MATH 309 – Continuous Optimization
MATH 310 – Introduction to Ordinary Differential Equations
MATH 348 – Probabilistic Models in Operations Research
MATH 470 – Variational Calculus

Computing Science Majors*

*Students pursuing a BSc in Computing Science cannot use MACM 316 toward the Mathematics Minor, as this course is required for the Computing Science Major.

General Computing:

Any MACM course
MATH 308 – Linear Optimization
MATH 309 – Continuous optimization
MATH 340 – Algebra II: Rings and Fields
MATH 343 – Applied Discrete Mathematics
MATH 345 – Introduction to Graph Theory
MATH 447 – Coding Theory

Scientific Computing:

MACM 203 - Computing With Linear Algebra
MACM 204 - Computing with Calculus
MATH 308 – Linear Optimization
MATH 309 – Continuous Optimization
MATH 310 - Introduction to Ordinary Differential Equations
MACM 316 - Numerical Analysis I
MACM 416 – Numerical Analysis II
MACM 409 – Numerical Linear Algebra and Optimization

Physics-Based Graphical Modeling

MATH 314 – Introduction to Fourier Methods and Partial Differential Equations
MACM 416 – Numerical Analysis II
MATH 461 – Continuous Mathematical Models
MATH 462 – Fluid Dynamics

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