

# Mathematics and Computing Science (MACM) joint Major and Honors Program

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# Outline.

- ▶ MACM major program requirements.
- ▶ MACM courses.
- ▶ Why would you take MACM?

# Lower division requirements for the MACM major.

CMPT 126-3 Intro to Computing Science and Programming  
(or CMPT 120 and 125)

CMPT 150-3 Introduction to Computer Design

CMPT 225-3 Data Structures and Programming

MATH 151-3 Calculus I (or MATH 150/154/157)

MATH 152-3 Calculus II (or MATH 155/158)

MATH 240-3 Algebra I: Linear Algebra (or MATH 232)

MATH 242-3 Intro to Analysis

MATH 251-3 Calculus III

STAT 270-3 Intro to Probability and Statistics

MACM 101-3 Discrete Mathematics I

MACM 201-3 Discrete Mathematics II

MACM 203-2 Computing with Linear Algebra AND

MACM 204-2 Computing with Calculus OR

CMPT 274-4 Software Engineering

# Upper division requirements for the major.

## All of

CMPT 307-3 Data Structures and Algorithms

MATH 340-3 Algebra II: Rings and Fields

MACM 316-3 Numerical Analysis I

## plus one of

CMPT 300-3 Operating Systems

CMPT 371-3 Data Communications and Networking

CMPT 379-3 Principles of Compiler Design

## plus one of

MATH 308-3 Linear Optimization

MATH 310-3 Differential Equations

MATH 345-3 Introduction to Graph Theory

**plus additional courses** so that the total credits add to  
at least **21 upper division MATH credits** and  
at least **24 upper division CMPT credits** of which  
at least **12 credits are at the 400 level.**

# MACM courses

MACM 101-3 Discrete Mathematics I  
MACM 201-3 Discrete Mathematics II  
MACM 203-2 Computing with Linear Algebra  
MACM 204-2 Computing with Calculus  
MACM 300-3 Formal Languages and Automata Theory with Applications  
MACM 316-3 Numerical Analysis I  
MACM 401-3 Computer Algebra  
MACM 409-3 Numerical Linear Algebra and Optimization  
MACM 416-3 Numerical Analysis II (differential equations)  
MACM 442-3 Cryptography  
MACM 498-3 Special Topics in Mathematics and Computing Science

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- ▶ Do a computing major with a **math minor** or a math major with a **computing minor**.
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## Questions?

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