

MATHEMATICS (MINOR)

Minor: Mathematics
Program Code: M460

About This Minor. . .

A minor in mathematics is a natural enhancement to many majors outside mathematics where an understanding of mathematics is needed (e.g. physics, engineering, computer science, chemistry, biology, geology).

A minor in mathematics enables non-mathematics majors to complete a focused course of study in mathematics on a smaller scale.

Requirements

Each section below contains details about the requirements for this program. Select a header to expand the information/requirements for that particular section of the program's requirements.

To print or save an overview of this program's information, including the program description, learning outcomes, requirements, suggested course sequencing (if applicable), and advising and graduation information, scroll to the bottom of the left-hand navigation menu and select "Print Options." This will give you the options to either "Send Page to Printer" or "Download PDF of This Page." The "Download PDF of This Page" option prepares a much more concise presentation of all program information. The PDF is also printable and may be preferable due to its brevity.

Institutional Minor Requirements

The following institutional requirements apply to all CMU minors. Specific programs may have different requirements that must be met in addition to institutional requirements.

- A minor consists of 15-24 semester hours. There may be prerequisites required for the minor which will increase the total number of credit hours for a student who has not already taken those prerequisites.
- Courses taken to satisfy Essential Learning, major requirements, or electives **can** be counted toward the minor if applicable.
- At least 33 percent of the credit hours required for the minor must be in courses numbered 300 or above.
- At least 25 percent of the classes must be taken at CMU.
- 2.00 cumulative GPA or higher for the courses used for the minor.
- A minor is not a degree by itself and must be earned at the same time as a baccalaureate degree.
- A minor must be outside the major field of study.
- A student may earn up to five minors with any baccalaureate degree at CMU.
- The Catalog Year determines which program sheet and degree requirements a student must fulfill in order to graduate. Visit with your advisor or academic department to determine which catalog year and program requirements sheet you should follow.
- See "Requirements for Undergraduate Degrees and Certificates" in the catalog for a complete list of graduation requirements.

Program Specific Minor Requirements

(19-24 semester hours)

Code	Title	Semester Credit Hours
MATH 152	Calculus II	4-5
or MATH 136	Engineering Calculus II	
Complete two courses from Group A OR two courses from Group B:		6-8
Group A:		
MATH 225	Computational Linear Algebra	
MATH 240	Introduction to Advanced Mathematics	
MATH 253	Calculus III	
MATH 260	Differential Equations	
Group B:		
MATH 236	Differential Equations and Linear Algebra	
MATH 240	Introduction to Advanced Mathematics	
MATH 253	Calculus III	
Group C:		
Select three of the following		9-11
MATH 310	Number Theory	
MATH 325	Linear Algebra	
MATH 352	Advanced Calculus	
MATH 360	Methods of Applied Mathematics	
MATH 361	Numerical Analysis	
MATH 362	Fourier Analysis	
MATH 365	Mathematical Modeling	
MATH 366	Methods of Applied Mathematics II	
MATH 369	Discrete Structures I	
MATH 370	Discrete Structures II	
MATH 386	Geometries	
MATH 420	Introduction to Topology	
MATH 430	Mathematical Logic	
MATH 450	Complex Variables	
MATH 452	Intro to Real Analysis I	
MATH 453	Intro to Real Analysis II	
MATH 460	Advanced Linear Algebra	
MATH 466	Methods of Applied Mathematics III	
MATH 490	Abstract Algebra I	
MATH 491	Abstract Algebra II	
MATH 396	Topics	
or MATH 496	Topics	
Total Semester Credit Hours		19-24

Advising and Graduation Advising Process and DegreeWorks

Documentation on the pages related to this program is intended for informational purposes to help determine what courses and associated requirements are needed to earn a minor. Meeting with an academic advisor is essential in planning courses and developing a suggested course sequencing. It is ultimately the student's responsibility to understand and fulfill the requirements for her/his intended minor.

DegreeWorks is an online degree audit tool available in MAVzone. It is the official record used by the Registrar's Office to evaluate progress towards a minor. Students are responsible for reviewing their DegreeWorks audit on a regular basis and should discuss questions or concerns with their

advisor or academic department head for the minor. Discrepancies in requirements should be reported to the Registrar's Office.

Graduation Process

A minor cannot be awarded by itself. It must be combined with a baccalaureate degree outside the major field of study. Students should follow the graduation process outlined for the baccalaureate degree and list their majors and minors on the "Intent to Graduate" form.

If a student's petition for graduation is denied, it will be her/his responsibility to consult the Registrar's Office regarding next steps.