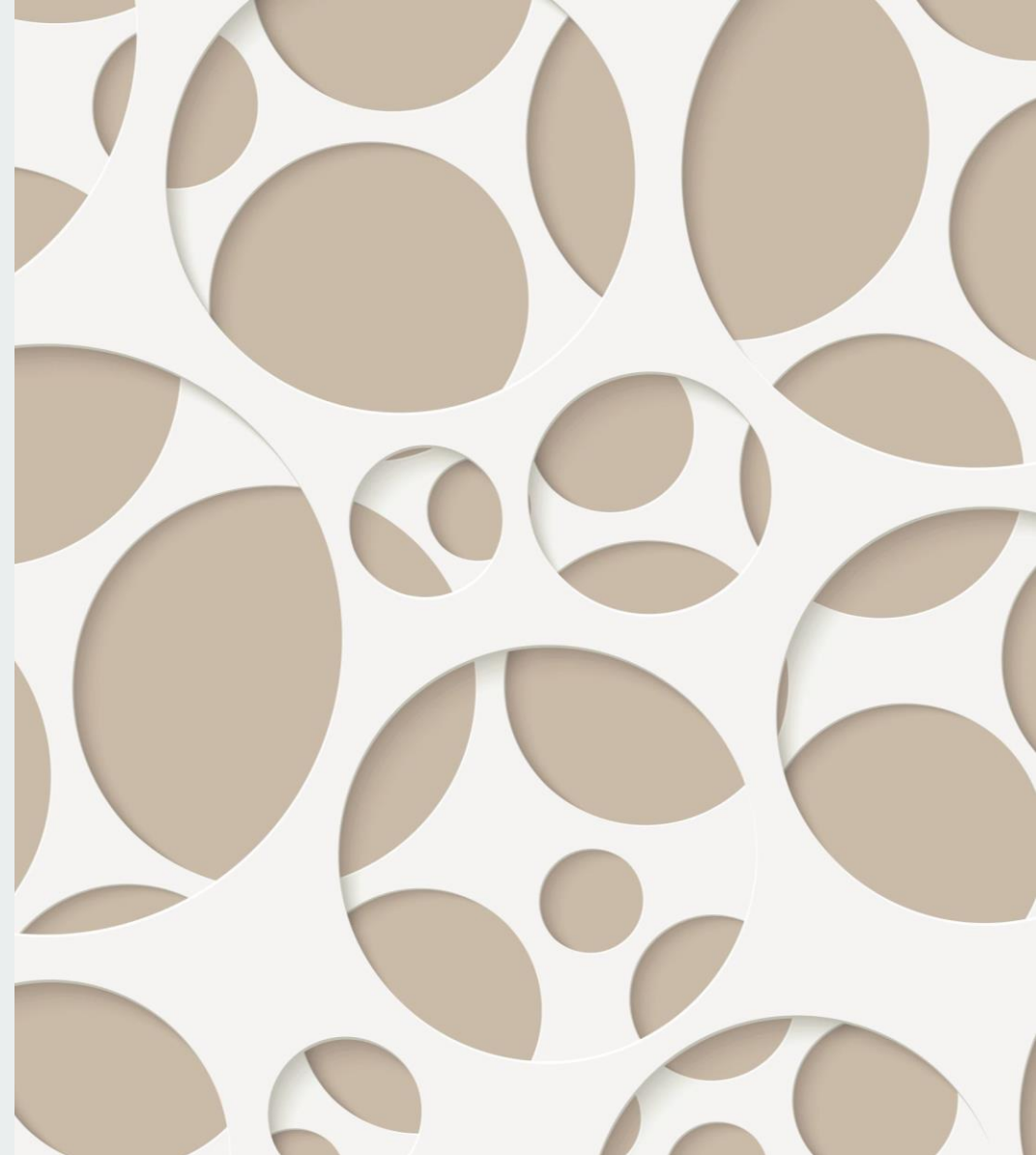


Information for Math Majors

A Quick Introduction for Undergraduates
Updated August 2026

More detailed information available at:

<https://www.umb.edu/science-mathematics/academic-departments/mathematics/math-tutoring-advising/>



5 Quick Tips for Success

1. Declare your concentration ASAP, no later than the semester after which you will have earned 60 credits.
2. Plan your program out in advance/build contingency plans.
(Try to finish MATH 140, MATH 141, MATH 242, PHYSIC 113, CS 110, and MATH 260 ASAP)
3. Aim to take MATH 280* (Proofs) by end of second year, perhaps along with MATH 242 and MATH 345.
4. Try to take no more than two (2) MATH courses per semester.
5. Make use of tutoring, especially for 100 & 200-level courses.

* As of Spring 2027, MATH 314 will be renumbered to MATH 280

Concentrations

Applied and Pure Mathematics (BS) Program

The Applied and Pure Mathematics Concentration is the most “traditional” concentration and students pursuing it will have a solid foundation for various math careers ahead of them. Students interested in going to graduate school in fields like mathematics or physics or working on mathematical modeling in industry or research laboratories, might want to consider the Applied and Pure Mathematics Concentration.

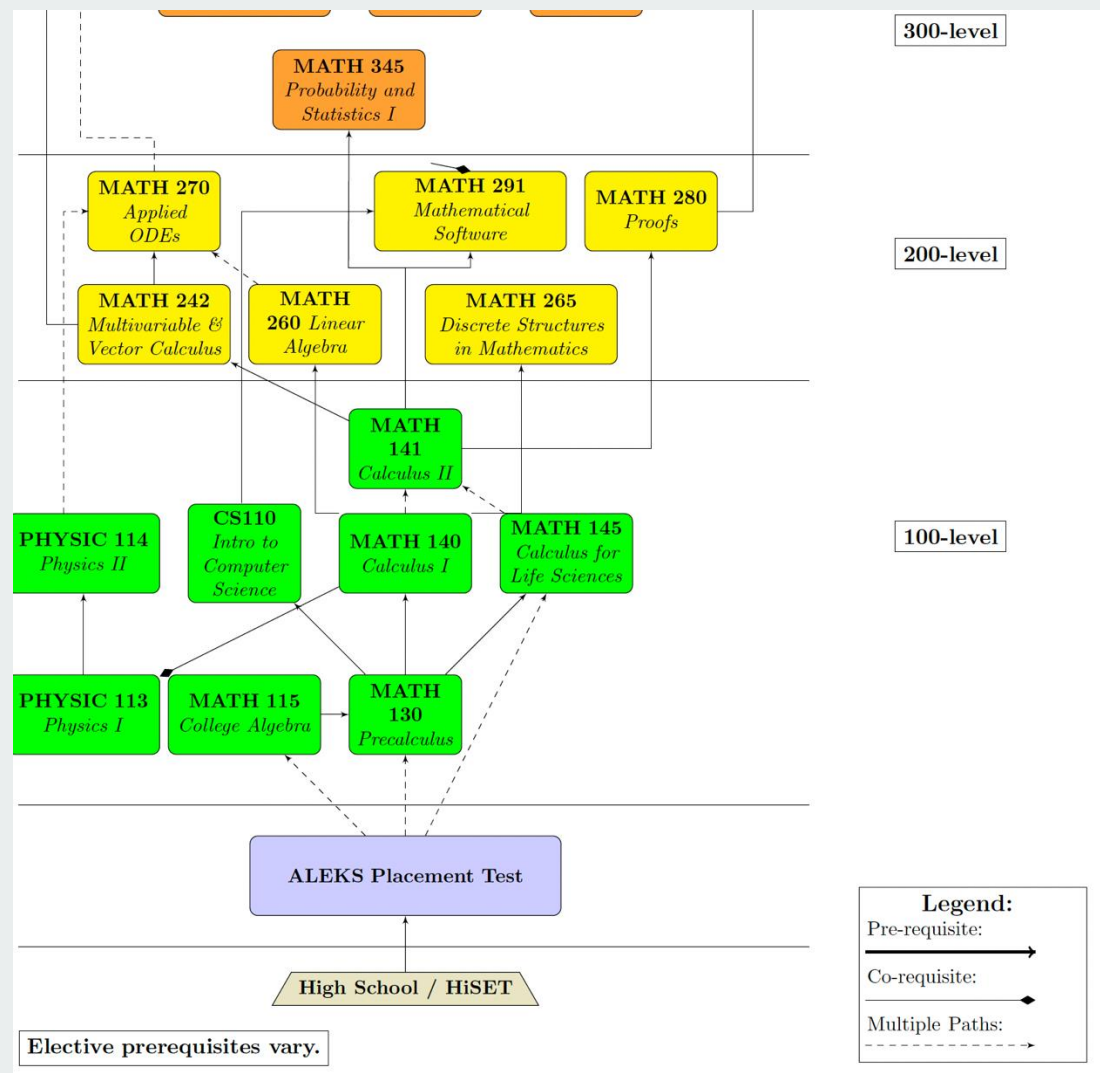
Computational Mathematics (BS) Program

The Computational Mathematics Concentration provides broad math education with an emphasis on computer and mathematical models as tools to solve real-world problems. Students graduating in this concentration would be qualified to look for jobs, for example, in actuarial companies, finance, machine learning industry or apply to grad schools in computational and data-driven sciences, like computer science, engineering or medical research.

Mathematics for Teaching (BA) Program

The Mathematics for Teaching Concentration provides broad math education with a focus on the development of math ideas and math reasoning. Students who are interested in teaching math, math education, developing educational software or other educational tools for math might consider this concentration.

Concentrations



Everyone takes these core courses: (38 cr.)

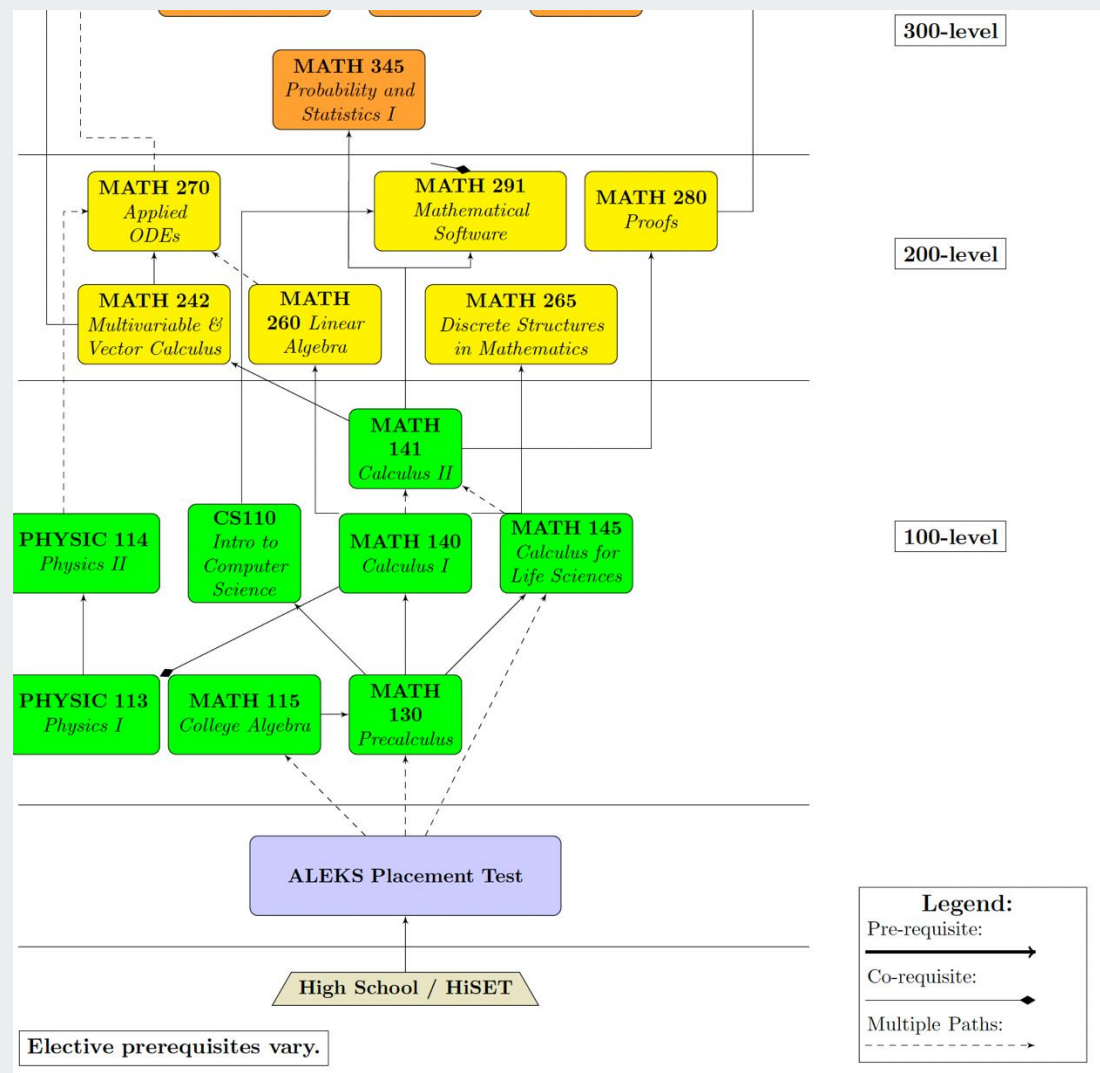
- MATH 140 (Calculus I)*§
- MATH 141 (Calculus II)*§
- MATH 242 (Multivariable/Vector Calculus) §
- MATH 260 (Linear Algebra) §
- MATH 265 (Discrete Structures) ¤
- MATH 270 (Ordinary Differential Equations)
- MATH 314 (Proofs)
- MATH 291 (Mathematical Software)@
- MATH 345 (Probability & Statistics)*§
- CS 110 (Intro. to Programming)*
- PHYSIC 113 (Fund. Of Physics I)*

* Offered in SS1
@ Fall Only

§ Offered in SS2
¤ Spring only

* As of Spring 2027,
MATH 314 will be
renumbered to
MATH 280

Concentrations



Bachelors of Science ONLY: (13-16 cr.)

- PHYSIC 114 (Fund. of Physics II)
- Two (2) non-lab courses from Physics, Biology, CS, Engineering, or Chemistry that satisfy a major requirement for their department.*
- One (1) non-lab **or** lab course from Physics, Biology, CS, Engineering, or Chemistry that satisfies a major requirement for their department.*

* Consult your degree audit for examples.

Concentrations

Applied/Pure BS

- MATH 358 (Complex Analysis)*
- MATH 360 (Abstract Algebra I)*
- MATH 361 (Abstract Algebra II)§
- MATH 450 (Real Analysis)§
- 1 300+ level elective
- 1 400+ level elective

Computational Math

- MATH 425 (Numerical Analysis)*
- MATH 426 (Numerical Lin. Alg.)§
- MATH 447 (Probability Models)*
- MATH 448 (Computational Stats)§
- MATH 360 (Abstract Algebra I)* **or**
MATH 450 (Real Analysis)§
- 1 300+ or 400+ level elective

* Fall Only

§ Spring Only

Concentrations

Math for Teaching

- MATH 360 (Abstract Algebra I)*
- MATH 370 (History of Math)§
- MATH 458 (Number Theory)§
- MATH 460 (Survey of Geometry)*
- 1 300+ level elective
- 1 400+ level elective

UTeach (consult WISER for course availability)

- INTR-D 170 (Inquiry Appr. to Teaching)
- INTR-D 175 (Inquiry-Based Lesson Dsn)
- EDC U 270 (Knowledge/Learning Math/Science)
- EDC U 275 (Classroom Interactions)
- EDC U 370 (Perspectives Sci/Math)
- EDC U 375 (Functions/Modeling)⌘
- EDC U 451 (RETELL)
- EDC U 499 (Practicum)

* Fall Only

§ Spring Only

⌘ can be used as 300+ math elective

Careers

More info: <https://www.bls.gov/ooh/math/>

- Statistician/Data Scientist
- Research mathematician
- Actuary
- Education/teaching
- Accounting
- Software engineering
- Financial planning
- Medicine/Medical Research
- Operations Research/Logistics
- Auditing
- Law

The top of the slide features a decorative header with a dark brown background. It contains several overlapping semi-circular shapes. Some are solid dark brown, while others are filled with concentric lines or a pattern of small, dark brown dashes.

Questions?