Undergraduate Mathematics Courses
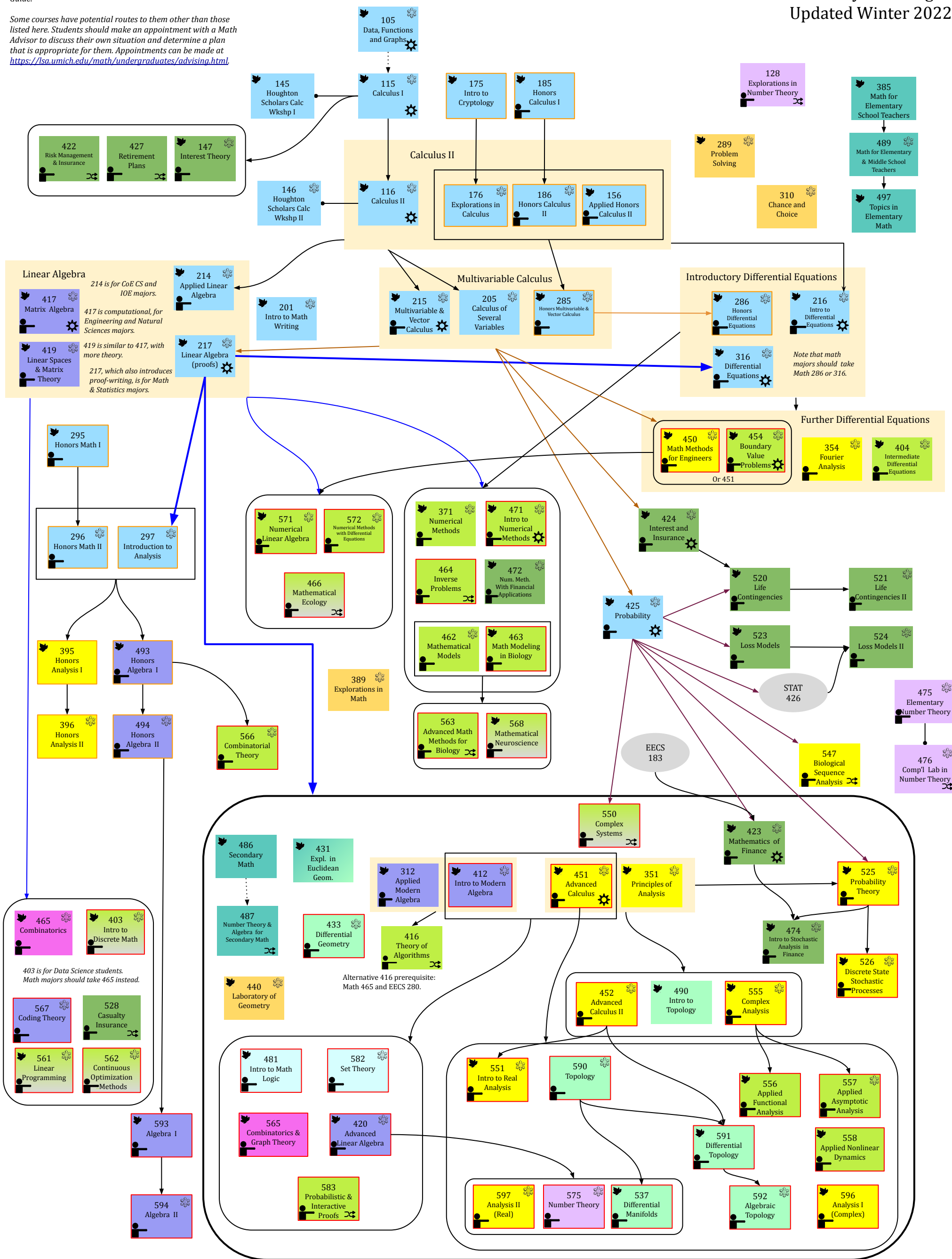
University of Michigan
Updated Winter 2022

This document gives a visual guide to the math courses available to undergraduate students. All of the information given here, as well as additional information (such as course content and typical student body) can be found in the Program Guide.

Some courses have potential routes to them other than those listed here. Students should make an appointment with a Math Advisor to discuss their own situation and determine a plan that is appropriate for them. Appointments can be made at https://lsa.umich.edu/math/undergraduates/advising.html.

105 Data, Functions and Graphs

145 Houghton Scholars Calc Wkshp I

115 Calculus I

175 Intro to Cryptology

185 Honors Calculus I

128 Explorations in Number Theory

385 Math for Elementary School Teachers

289 Problem Solving

489 Math for Elementary & Middle School Teachers

422 Risk Management & Insurance

427 Retirement Plans

147 Interest Theory

146 Houghton Scholars Calc Wkshp II

116 Calculus II

Calculus II

176 Explorations in Calculus

186 Honors Calculus II

156 Applied Honors Calculus II

310 Chance and Choice

497 Topics in Elementary Math

Linear Algebra

214 is for CoE CS and IOE majors.

417 is computational, for Engineering and Natural Sciences majors.

419 is similar to 417, with more theory.

217, which also introduces proof-writing, is for Math & Statistics majors.

417 Matrix Algebra

419 Linear Spaces & Matrix Theory

214 Applied Linear Algebra

201 Intro to Math Writing

217 Linear Algebra (proofs)

Multivariable Calculus

215 Multivariable & Vector Calculus

205 Calculus of Several Variables

285 Honors Multivariable & Vector Calculus

Introductory Differential Equations

286 Honors Differential Equations

216 Intro to Differential Equations

316 Differential Equations

Note that math majors should take Math 286 or 316.

Further Differential Equations

450 Math Methods for Engineers

454 Boundary Value Problems

Or 451

354 Fourier Analysis

404 Intermediate Differential Equations

295 Honors Math I

296 Honors Math II

297 Introduction to Analysis

424 Interest and Insurance

425 Probability

520 Life Contingencies

521 Life Contingencies II

523 Loss Models

524 Loss Models II

571 Numerical Linear Algebra

572 Numerical Methods with Differential Equations

466 Mathematical Ecology

371 Numerical Methods

471 Intro to Numerical Methods

464 Inverse Problems

472 Num. Meth. With Financial Applications

462 Mathematical Models

463 Math Modeling in Biology

395 Honors Analysis I

493 Honors Algebra I

389 Explorations in Math

396 Honors Analysis II

494 Honors Algebra II

566 Combinatorial Theory

563 Advanced Math Methods for Biology

568 Mathematical Neuroscience

475 Elementary Number Theory

476 Comp'l Lab in Number Theory

STAT 426

547 Biological Sequence Analysis

EECS 183

550 Complex Systems

423 Mathematics of Finance

525 Probability Theory

486 Secondary Math

431 Expl. in Euclidean Geom.

312 Applied Modern Algebra

412 Intro to Modern Algebra

451 Advanced Calculus

351 Principles of Analysis

487 Number Theory & Algebra for Secondary Math

433 Differential Geometry

416 Theory of Algorithms

474 Intro to Stochastic Analysis in Finance

526 Discrete State Stochastic Processes

Alternative 416 prerequisite: Math 465 and EECS 280.

440 Laboratory of Geometry

452 Advanced Calculus II

490 Intro to Topology

555 Complex Analysis

465 Combinatorics

403 Intro to Discrete Math

403 is for Data Science students. Math majors should take 465 instead.

481 Intro to Math Logic

582 Set Theory

551 Intro to Real Analysis

590 Topology

556 Applied Functional Analysis

557 Applied Asymptotic Analysis

567 Coding Theory

528 Casualty Insurance

561 Linear Programming

562 Continuous Optimization Methods

565 Combinatorics & Graph Theory

420 Advanced Linear Algebra

591 Differential Topology

558 Applied Nonlinear Dynamics

593 Algebra I

583 Probabilistic & Interactive Proofs

597 Analysis II (Real)

575 Number Theory

537 Differential Manifolds

592 Algebraic Topology

596 Analysis I (Complex)

594 Algebra II

KEY

Area (approximate):

Graduate Course	Foundational Course	Actuarial & Finance	Analysis	Combinatorics	Geometry/ Topology	Number Theory	Cross-listed from other department
Honors Course		Algebra	Applied	Education	Logic	Other	Other dept.

Term(s) offered:
- Fall
- Winter
- Spring and/or Summer
- Sporadic

Course is typically taught in traditional lecture style

Unmarked courses are taught with active learning or IBL

Courses with related content