

The Mathematics Major consists of four core courses common to all mathematics majors (Calculus I and II, Linear and Abstract Algebra), additional courses in a specialty of interest (**Pure Mathematics**, **Computational Mathematics**, or **Financial Mathematics**), and mathematics electives to bring the total number of mathematics credits to nine.

Students should complete the four core courses during their freshmen and sophomore years. This is especially important for Math 111 (Calculus I), Math 112 (Calculus II), and Math 223 (Linear Algebra), as these are prerequisites for higher level mathematics courses. It is essential that the core courses be completed by the end of the junior year. (For students who begin in Math 010, Math 110 may be substituted for Math 111). By the end of their sophomore year, most mathematics majors have decided which track they will pursue and select courses appropriately. Planning can be tricky, especially for students in the Teacher Education Program, and students should review course plans with a mathematics professor. Students are encouraged to have taken at least nine credits in mathematics by the end of the fall semester of senior year so they are prepared to field a wide variety of questions on their senior comprehensive examinations. Details on the various tracks are given below. If you would like to be added to the Canvas mailing list, please contact Rebekah Mason at masonr@wabash.edu.

If you are interested in graduate school, there is a box with a blue lid in the Commons Room full of information from many schools.

Requirements for the Pure Mathematics Major:

- 4 cr. Calculus I (111), Calculus II (112), Linear Algebra (223), and Abstract Algebra (331)
- 1 cr. Real Analysis (333) or Topology (341)
- 4 cr. Mathematics Electives to reach the 9-credit minimum

- For more details, see the Academic Bulletin.
- Some courses are offered every other year. Careful planning is necessary.
- Students planning to attend graduate school are strongly urged to take more than the minimum of nine courses and to inquire about which electives are good preparation for graduate work.

Sample Four-Year Schedules: Pure Mathematics Major

Freshman Year		Sophomore Year		Junior Year		Senior Year	
111 Calculus I	112 Calculus II	223 Linear Algebra	331 Abstract Algebra	Math Elective	Math Elective		
				Math Elective	Math Elective	333 Real Variables	

Freshman Year		Sophomore Year		Junior Year		Senior Year	
111 Calculus I	112 Calculus II	223 Linear Algebra	331 Abstract Algebra	Math Elective	Math Elective	Math Elective	
				Math Elective	341 Topology		

Requirements for the Pure Mathematics Major, Mathematics Teaching Education Program:

- 4 cr. Calculus I (111), Calculus II (112), Linear Algebra (223), and Abstract Algebra (331)
- 4.5 cr. Combinatorics (219), Foundations of Geometry (221), Theory of Numbers (222), Statistical Models (254), and Real Analysis (333)
- 0.5-1 cr. Mathematics Electives to reach the 9-credit minimum

Sample Four-Year Schedule: Pure Mathematics Major, Mathematics Teaching Education Program

Freshman Year		Sophomore Year		Junior Year		Senior Year	
111 Calculus I	112 Calculus II	223 Linear Algebra	331 Abstract Algebra		219 Combinatorics or 222 Number Theory	Math Elective	
			219 Combinatorics or 222 Number Theory	333 Real Variables	221 Geometry		
					254 Stat Models		

Requirements for the Computational Mathematics Major:

- 4 cr. Calculus I (111), Calculus II (112), Linear Algebra (223), and Abstract Algebra (331).
- 1 cr. Introduction to Programming (CSC 111). Should be taken by the sophomore year, if possible. Does not count as a mathematics credit.
- 1 cr. Numerical Methods (337) or Topics in Computational Mathematics (338). These have CSC 111 as a prerequisite.
- 4 cr. Mathematics Electives to reach the 9-credit minimum.

Sample Four-Year Schedule: Computational Mathematics Major

Freshman Year		Sophomore Year		Junior Year		Senior Year	
111 Calculus I	112 Calculus II	223 Linear Algebra	331 Abstract Algebra	Math Elective	Math Elective	Math Elective	
		CSC 111 Intro to Programming		337 Num. Analysis or 338 Comp. Mathematics	Math Elective		

Freshman Year		Sophomore Year		Junior Year		Senior Year	
111 Calculus I	112 Calculus II	223 Linear Algebra	331 Abstract Algebra	Math Elective	Math Elective	Math Elective	
			Math Elective	CSC 111 Intro to Programming		337 Num. Analysis or 338 Comp. Mathematics	

Requirements for the Financial Mathematics Major:

- 4 cr. Calculus I (111), Calculus II (112), Linear Algebra (223), and Abstract Algebra (331)
- 1 cr. Mathematical Finance (251) and Mathematical Interest Theory (252)
- 1 cr. Probability Models (253) and Probability Models II (353)
- 1 cr. Statistical Models (254) and either Mathematical Statistics (354) or Regression Models (355)
- 2 cr. Mathematics Electives to reach the 9-credit minimum

Math 251-4 and Math 353-4 will help students prepare for the five preliminary actuarial exams.

Sample Four-Year Schedules: Financial Mathematics Major

Freshman Year		Sophomore Year		Junior Year		Senior Year	
111 Calculus I	112 Calculus II	223 Linear Algebra	331 Abstract Algebra		Math Elective	Math Elective	
		253 Prob M	353 Prob M II	254 Stat Mod	354 MS or 355 Reg M	252 Int Theory	251 Math Fin

Freshman Year		Sophomore Year		Junior Year		Senior Year	
111 Calculus I	112 Calculus II	223 Linear Algebra	331 Abstract Algebra		Math Elective	Math Elective	
		252 Int Theory	251 Math Fin	253 Prob M	353 Prob M II	254 Stat Mod	354 MS or 355 Reg M

Freshman Year		Sophomore Year		Junior Year		Senior Year	
111 Calculus I	112 Calculus II	223 Linear Algebra	331 Abstract Algebra	Math Elective	Math Elective		
				253 Prob M	353 Prob M II	254 Stat Mod	354 MS or 355 Reg M
						252 Int Theory	251 Math Fin