

A Guide to First Year Mathematics Courses

This document is an attempt by the mathematics department to help students decide where they should begin their college mathematics experience. Should the students still have questions they should contact the chair of the Mathematics Department for clarification.

All entering students are encouraged to take the Math Placement Exam during the orientation week or before the end of the first semester at DePauw with the following exceptions:

- students who transfer with college credit for MATH 151(Calculus I), 152(Calculus II) or 251(Calculus III);
- students who score 4 or 5 on the Advanced Placement AB calculus exam, and who report their score to DePauw;
- students who score 4 or 5 on the Advanced Placement BC calculus exam, and who report their score to DePauw;
- students who score 3 on the Advanced Placement BC calculus exam with a 4 or 5 on the AB subscore of this exam, and who report their score to DePauw.

The Math Placement Exam is designed for students to test out of Math 151 (Calculus I) and into Math 152 (Calculus II). It consists of 30 questions covering algebra, pre-calculus mathematics, and trigonometry topics: geometry and measurement; algebraic manipulation; equations, inequalities, and factoring; trigonometry; functions and their notation, including linear, polynomial, rational, trigonometric, exponential, and logarithmic functions; graphs of functions; and word problems and modeling. You can only take the Math Placement Exam once; there is no retake policy.

	Scores	Course & Credits
Calculus AB	3	If the student enrolls in MATH 152 completes with a 'C-' or better, 1.00 credit will be awarded for MATH 151.
	4/5	Awards MATH 151, Calculus I credit. The student may enroll in MATH 152.

Calculus BC	3	Awards MATH 151, Calculus I, credit. The student may enroll in MATH 152 or 251. If MATH 251 is completed with a 'C-' or better, 1.00 credit will be awarded for MATH 152.
	4/5	Awards MATH 151, Calculus I, and MATH 152, Calculus II, credits. The student may enroll in MATH 251

There are several options for entry into the mathematics curriculum, but any student who **HAS NOT** scored at least 500 on the SAT (Mathematics) or 22 on the ACT (Mathematics) may struggle with **ANY** collegiate course in mathematics. We provide academic support (Math Tutors, STEM Guides and Q Tutors) to support those students. Mathematics courses require students to **DO** mathematics and most of them rely on existing mathematical knowledge and build on skills and content developed over the course of the semester.

Student Interest	Recommended Course
Major or minor in Mathematics	MATH 151 and MATH 152
Major in Actuarial Science	MATH 151 and MATH 152
Minor in Statistics	MATH 141 and MATH 151
Major in Computer Science	MATH 123
Major in Physics or Economics	MATH 151 or MATH 135/136
Students who want a math course that will count toward Science and Math distribution credit or Q competency, but who do not need calculus	MATH 123, MATH 141 or MATH 143

Course Description of 100-level Mathematics courses:

MATH 123: Computational Discrete Mathematics. This course is required for the computer science major. The topics covered in this course should be familiar to students, but from different places in their pre-college curriculum. Some students find a challenge in “changing gears” between the different topics and acquiring a working knowledge of the extensive mathematical vocabulary presented in the course. **No prerequisite for this course.**

MATH 135: Calculus with Review I. This course is calculus with a “just in time” approach to including precalculus material into the calculus course. It is a safety net for students who enroll in MATH 151 and find the challenges of a collegiate course, pace and independent inquiry, overly challenging. For that reason, there is limited space in these courses with spaces saved for students attempting MATH 151 and “dropping back” to MATH 135. This course is not open to students with credit in MATH 151 or any higher level calculus course

MATH 136: Calculus with Review II. Completion of this course is equivalent to completing MATH 151 and is adequate preparation for any course requiring MATH 151.

MATH 141: Stats for Professionals. This course can be used to fulfill the requirements for a major in kinesiology. It has significant content overlap with Econ 350. While very practical for people wanting to understand modern life (confidence intervals, hypothesis testing, polling, research data, etc.), that understanding comes from a solid base of mathematics that allows students to understand how statisticians think about and interact with the world around them. **No prerequisite for this course.**

MATH 143: Mathematical Modeling I. This course is very useful for people wanting to understand mathematical modeling and analysis of real-life data (population growth and decay, rate of disease spread in population, savings certificates and annuities, purchasing power, optimizing transportation costs, networks, etc.), and this understanding comes from a strong foundation of mathematics that allows those who take the course, to understand how mathematicians think about and interact with the world around them. **No prerequisite for this course.**

MATH 151: Calculus I: This has been the “standard” collegiate mathematics course for many years. Through the growth of the Advanced Placement program, the large majority of students first encounter with calculus happens in high school and the majority of students who enroll in MATH 151 have already had at least one experience with a calculus course before. The course moves at the same pace it has always moved, but this is significantly faster than high school courses, covering in 42 class hours what many high schools cover in 180 hours.

MATH 152: Calculus II: This is a standard second-semester calculus course requires that students have MATH 151 credit or Calculus I transferred credit to enroll in this course.