

Math Placement Recommendations for Biology Majors

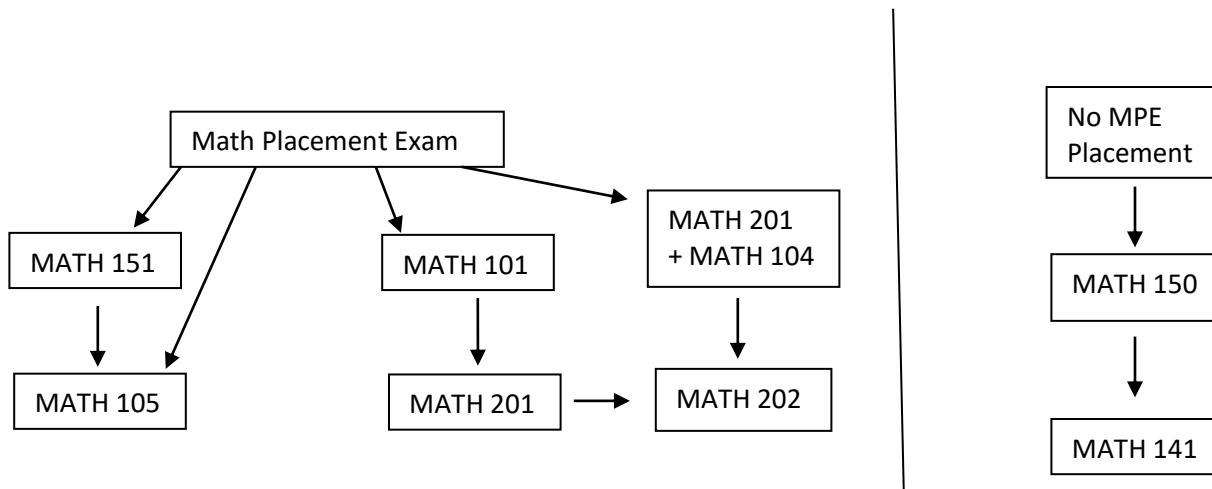
All biology majors should take the Math Placement Exam (MPE) to determine which math class they are eligible to enroll in their first semester. Students who have not yet taken the exam can sign up for it at <http://www.winthrop.edu/mpe>. Those who want to register for MATH 101, MATH 105, MATH 151, or MATH 201 must score high enough on the MPE or meet the prerequisite requirements through coursework (Note: MATH 150 is not a prerequisite for any of those courses). Students completing MATH 150 will need to take the MPE in order to enroll in a higher math class.

Biology Majors must complete two math classes to satisfy the major's math requirement. Which math classes they take is dependent on their goals for after graduation (e.g. graduate school, professional program, employment, etc.). For example, many Biology Majors take more than two math classes and complete their math progression through calculus (MATH 105 or 201). Students should make their decisions in consultation with their academic advisors.

Math Placement Exam (MPE)

Each student will receive a report indicating his/her readiness for MATH courses. This report will indicate a score from "None" to 4. The placement levels for the Math Placement Exam are as follows:

- 4 or higher – student may enroll in MATH 101 or 201 (with MATH 104)
- 3 – eligible to enroll in MATH 151, 101, 105, or 201 (with MATH 104)
- 2 – eligible to enroll in MATH151 or MATH101.
- 1 – eligible to enroll in MATH151.
- None or did not take the placement exam – plan to take (or re-take) the math placement exam.
Students should consider taking MATH 150.



Students interested in the Biomedical Research Track, which requires MATH201, should consider the following recommendations from the Math Department:

- 4 or higher – eligible to enroll in MATH101 or MATH201
- 3 - eligible to enroll in MATH101 or MATH201 (with MATH104)
- 2 - eligible to enroll in MATH101
- 1 - Adviser should contact Math Department Chair with the student's information to gain permission to take MATH101.
- None or did not take the placement exam - Adviser should contact Math Department Chair who will discuss what options are available for placement.

Mathematics Course Descriptions

MATH 151 - Applied College Algebra (3). Description: A study of the algebraic skills needed to perform computations in applied settings. Topics include: equations, inequalities, functions, graphs, and financial mathematics. Prerequisites: Satisfactory score on Mathematics placement exam.

MATH 101 - Algebra and Trigonometry for Calculus (3). Description: The study of algebraic and trigonometric skills needed for single variable calculus. Topics include equations, graphs, polynomial and rational functions, exponentials, logarithms, and trigonometry. Credit will not be allowed for MATH 101 and MATH 104. Prerequisites: Satisfactory score on Mathematics placement exam or a C- or better in MATH 151

MATH 104 - Trigonometry for Calculus (1). Description: This course is designed to be taken concurrently with MATH 201. Content includes basic properties and identities of trigonometry, Euler's formula, double angle identities and inverse functions. Credit will not be given for MATH 101 and MATH 104. Corequisites: MATH 201.

MATH 105 - Applied Calculus (3). Description: A study of differential and integral calculus in applied settings. Topics include: Limits, differentiation and associated applications, integration and associated applications, and multivariable calculus. Prerequisites: A grade of C or better in MATH 101 or MATH 151, or satisfactory score on the Mathematics placement exam.

MATH 141 - Finite Probability and Statistics (3). Description: Elementary topics in probability and statistics, including descriptive statistics, binomial and normal distributions, estimation, hypothesis testing (including Chi-square tests), simple linear regression and correlation, and the examination of published research. Prerequisites: 3 hours of MATH credit with a grade of C- or better.

MATH 201 - Calculus I (4). Description: Limits, continuity, and the definition of the derivatives; techniques of differentiation, graphing, maximum/minimum and related rate problems; definite integrals and the fundamental theorem of calculus. Credit will not be allowed for MATH 105 and MATH 201. Prerequisites: A grade of C- or better in MATH 101 or satisfactory score on Mathematics Department Placement Test. Co-requisites: Math 104 or satisfactory score on Mathematics Department Placement Test. A grade of C- or better in MATH 101 replaces these co-requisites.

Students who did not score high enough on the MPE or did not complete the MPE can register for MATH 150. Students should plan to take (or retake) the MPE as soon as they can, even if they enroll in MATH 150 in their first semester.

MATH 150 - Introductory Discrete Mathematics (3). Description: A study of basic skills and applications necessary for critical thinking in a quantitative world. Topics include: sets, logic, counting, probability, and statistics. Notes: Lab Fee: \$10. Degree credit will not be given for both CTQR 150 and MATH 150.

Biology majors should not register for MATH 111 or 112, since they are not appropriate for science majors:

[Not Recommended] MATH 111 - Everyday Mathematics (3) Description: This course covers the skills and tools needed to work with quantitative information in daily life - numbers in the news, taxes, debt, inflation, and probabilities. The emphasis is on real world, open-ended exercises that involve reading, writing, calculating, synthesizing, and clearly reporting results. Topics include back-of-an-envelope estimation, descriptive statistics, linear and exponential models, spreadsheets and the wise use of internet resources.

[Not Recommended] MATH 112 (Math 114X) – Joy of Mathematics (3) Description: An exploration of mathematical ideas with an emphasis on conceptual ideas and effective thinking. Topics may include, but are not limited to, elementary number theory, infinity, chaos and fractals, patterns in nature, math in art, non-Euclidean geometry, tessellations and symmetry.