THE OHIO STATE UNIVERSITY

Department of Mathematics
217 Mathematics Building
231 W. 18th Avenue
Columbus, OH 43210-1174

Calculus Options

1131 Calculus for Business (5)
Prereq: Math Placement Level L; C- or better in 1130 or 1148; credit for 130 or 148.
Exclusion: Not open to students with credit for any math class numbered 1151 or higher.
Survey of calculus of one and several variables; applications to business.

1140 Calculus with Review I (4)
Prereq: Placement L; C- or better in: 1150 or {1148 & 1149}.
Exclusions: Not open to students with credit for 1141, 1151, or with credit for any higher numbered math class.
This is the first of a two semester course sequence. The topics covered in Math 1140 will include differential calculus of one real variable, with review of important algebra and pre-calculus concepts.

1141 Calculus with Review II (4)
Prereq: C- or better in: Math 1140
Exclusions: Not open to students with credit for 1151 or with credit for any higher numbered math class.
This is the second of a two semester course sequence. The topics covered in Math 1141 will include differential calculus of one real variable, with review of important algebra and pre-calculus concepts.

1151 Calculus 1 (5)
Prereq: Placement L, or C- or better in: 1150, {1148 & 1149}, or 150.
Exclusions: Not open to students with credit for any higher numbered math class.
Limits, derivatives, max-min, definite integrals, Fundamental Theorem, substitution in integrals, applications.

1152 Calculus 2 (5)
Prereq: C- or better in 1151, 1156, 152, or 161, or in 114 or 1114.
Exclusions: Not open to students with credit for any higher numbered math class.
Integration techniques, sequences and series, convergence tests, Taylor series, parametric and polar curves, {optional: vectors}.

2153 Calculus 3 (4)
Prereq: C- or better in 1152 or 1172; or credit for 153, or 162, or 1534.
Exclusions: Not open to students with credit for any higher numbered math class.
Vectors, several variables, partial derivatives, chain rule, gradient, max-min, multiple integrals, line integrals and vector fields, divergence, curl, integration theorems.

1172 Engineering Math A (5)
Prereq: C- or better in 1151, 152, or 161, or in 114 or 1114.
Exclusions: Not open to students in math, pre-actuarial science, or actuarial science. Not open to students with credit for any higher numbered math class, or for 1152.
Integration techniques, sequences & series, Taylor series, vectors and parametric curves, several variables, partial derivatives, chain rule, max-min.

2173 Engineering Math B (3)
Prereq: C- or better in 1172; or credit for 1544 or 154.
Exclusions: Not open to students with credit for any higher numbered math class, or for 1152 or 2153.
Multiple integrals, line integrals, vector fields, second order constant coefficient ODEs.

2174 Linear Algebra and Differential Equations for Engineers (3)
Prereq: C- or better in 2173 and enrollment in Engineering, Physics or Chemistry major; or permission of Math dept.
Exclusions: Not open to students with credit for both 2415 (415) or 2255 (255), and 2458 (568 or 571)
Matrix theory, eigenvectors and eigenvalues, ordinary and partial differential equations.

1156 Calculus for the Biological Sciences (5)
Prereq: Placement L; C- or better in: 1150 or {1148 & 1149}; or credit for 150.
Exclusions: Not open to students with credit for 1151, or with credit for any higher numbered math class.
Discrete models, limits and continuity, derivatives and applications, antiderivatives, integrals, Fundamental Theorem, team modeling projects.

1157 Mathematical Modeling for the Biological Sciences (5)
Prereq: C- or better in: Math 1156, 1151; or credit for 152.
Exclusions: Not open to students with credit for 1152 or with credit for any higher numbered math class.
Integration, topics in linear algebra, dynamical systems, vector fields, gradients, team modeling project

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1181H Honors Calculus 1 (5)
Prereq: Permission of department.
Exclusion: Not open to students with higher numbered math class
Differential calculus of one variable, integral calculus, convergence of sequences and series, Taylor series with remainder estimates, vectors, derivatives of vector functions. Emphasis on abstract proofs.

2182H Honors Calculus 2 (5)
Prereq: C- or better in 1181H
Exclusion: Not open to students with higher numbered math class
Multivariable calculus treated in depth.

4181H Honors Analysis I (5)
Prereq: Permission of department
4181H-4182H is an enriched honors sequence introducing students to mathematical underpinnings of calculus.

4182H Honors Analysis II (5)
Prereq: C- or better in 4181H or permission of department
Continuation of math 4181 H.