CALCULUS PLACEMENT

This info and more can be found at
http://www.sas.rochester.edu/mth/undergraduate/handbook/placement.html

A combination of SAT and ACT scores, AP calculus exam scores, and high school records are used to place in-coming students in the appropriate mathematics course. This placement is not optional.

Some students may not be satisfied with their placement. There is a placement exam for students placed into MTH 140 or 141 that would like to take a higher course. If the student has AP credit or other advanced credit, they should register for class according to the guidelines below. In case of a discrepancy or question, students are encouraged to speak with a representative of the Mathematics department at the Academic Open House during Orientation.

Placement Exam: For those students who are placed into MTH 141 (or 140) but are interested in taking either MTH 161 (or 141), there will be a placement exam offered:

Friday, August 26, 3 p.m. - 4:30 p.m. in Hubbell Auditorium

The exam covers standard pre-calculus material. A study guide and last year's exam are linked to the website above. Note that all calculus courses use the same textbook, so placement does not affect book-buying decisions.

Advanced Credit: For students with advanced credit (AP, IB, A-level, or transfer course), advanced credit rules take precedence, according to the following guidelines:

- Cambridge A-level examinations in mathematics or a calculus course at another college must consult with a mathematics faculty member at Orientation to determine if credit is awarded

- Students that scored a 4 or better on the Higher-Level International Baccalaureate (IB) mathematics exam are placed into MTH 162 and awarded credit for MTH 161 after completion of MTH 162 with a grade of C or better. Students can also opt for MTH 171, although no advanced credit is award with this options. No credit or advanced placement is granted for subsidiary level exams.
**AP credit** is awarded as follows:

(Updated Spring 2016: AB 2-3 and BC 2 credit valid through graduating class 2019.)

<table>
<thead>
<tr>
<th>AP Course</th>
<th>Placement</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>AB 4-5</td>
<td>MTH 162 or 171</td>
<td>One semester of credit</td>
</tr>
<tr>
<td>BC 3</td>
<td>MTH 162 or MTH 171</td>
<td>One semester of credit</td>
</tr>
<tr>
<td>BC 4-5</td>
<td>MTH 164, MTH 165, MTH 171, or, in exceptional cases, MTH 173</td>
<td>Two semesters of credit if placed in MTH 164, 165 or 173. One semester of credit if MTH 171 completed.</td>
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Students who receive AP credit for MTH 161 may register for MTH 162 or MTH 171. Advanced placement is only into courses of the 160 sequences or on rare occasions for extraordinarily well-prepared students into the 170 sequences. There is no advanced placement in the 140 sequence.

MTH 171 (Honors Calculus I) is particularly recommended for students interested in mathematics, physics, or theoretical engineering who would like to gain a deeper knowledge of how and why calculus works so effectively.

A comparison of the various calculus sequences can be found at [http://www.sas.rochester.edu/mth/undergraduate/calculus-sequences.html](http://www.sas.rochester.edu/mth/undergraduate/calculus-sequences.html)
BIOLOGY COURSES TYPICALLY TAKEN FALL OF FRESHMAN YEAR

BIO 110 Principles of Biology I: Offered Fall, Spring, Summer
BIO 112 Perspectives in Biology: Offered in Fall only

COURSE DESCRIPTIONS

BIO 110 Principles of Biology I
(CRN 13336 Instructor Dr. Michael Clark), (CRN 13347 Instructor Dr. Thomas Eickbush)
The first semester of a year-long introductory course sequence. Topics include biochemistry, cell and molecular biology, cell reproduction, plant and animal physiology. Emphasis will be placed on quantitative learning, especially experimental approaches and data analysis. BIO 110 is designed for Biological Science majors, all pre-medical school tracts, and will prepare students for upper level biology courses.

Prerequisites: Completion or concurrent enrollment in CHM 131 or equivalent

BIO 112 Perspectives in Biology I
(CRN 13655 Instructor Dr. David Goldfarb)
The first semester in a year-long introductory course sequence including BIO 113. The course will cover fundamental aspects of genetics, biochemistry, and molecular and cellular biology needed for subsequent coursework. Lectures will emphasize concepts, experimental approaches, data analysis and quantitative methods, and will include additional readings of original research papers and readings from popular literature and the press. BIO 112 is designed for freshmen with strong biology backgrounds (see prerequisites).

Prerequisites: Students with a score of 4 or 5 on the AP Biology test, or an IB score of 7. Completion or concurrent enrollment in CHM 131 or equivalent.

SIMILARITIES AND DIFFERENCES BETWEEN BIO 110 AND 112

Similarities
- Both courses are designed for majors and minors in the Biological Sciences as well as all premedical tracts.
- Both courses employ problem-based, peer-led small group discussions and emphasize experimental approaches and the quantitative skills needed to understand biological research.

Differences
- Bio 112 is designed for freshman who have demonstrated knowledge of basic biological and chemical concepts. This prior knowledge will enable topics to be covered in greater depth, as well as provide the opportunity to cover additional current biological topics and to read original research papers.

BIO 110 HAS TWO SECTIONS

To reduce class size there are two sections of BIO 110. Both sections will equally prepare students for upper-level courses in the biological sciences. The two sections will include mandatory weekly workshops, use the same textbook, and have the same scheduled class time to allow students to transfer between sections in the first weeks of class.

DIFFERENCES BETWEEN THE TWO BIO 110 SECTIONS

CRN 13336 (Clark)
- open to freshmen and upper-class students.
- is appropriate for students who took AP Biology in high school but scored below a 4 on the AP exam, or below a 7 on the IB exam.
- is generally designed for students from high schools with strong science programs, or who have already been exposed to natural sciences at the University of Rochester.

CRN 13347 (Eickbush)*
- open to freshmen (upper-class students must get permission from the instructor).
- requires all students to participate in a weekly, 90-minute supervised study session to provide additional help for students to transition to science at the university level.
- is generally designed for students from high schools that do not offer AP courses in the sciences.

* To better integrate the teaching of biology and chemistry, students in this section are strongly recommended to take the CRN16662 section of CHM 131 (Instructor, Dr. Ben Hafensteiner).
Guidelines for describing the new BIO 110 section

CRN 13347, Eickbush, instructor

(e.g. for pre-major advisors, freshmen peer mentors, admissions personal)

Phrases **to be used** to describe the new section:
- a class for students from high schools that do not offer college level science courses.
- a smaller class that **offers more structured contact hours and individual help.**
- a class that **teaches more effective study/learning skills.**
- a class that will **help students transition to science at the university level.**

Phrases **not to be used** to describe the new section:
- an easier class.
- a lower level class.
- a class for weaker students.
- a class that covers less material (or does not go as deeply into topics).
- a class for students at risk of performing at a lower level in the sciences.