

Bentley University
First Year Mathematics

All Bentley University undergraduates are required to complete two mathematics courses as part of their general education requirement. This requirement may be satisfied by:

1. Earning a 4 or 5 on the AP Calculus BC exam or earning a 5 or higher on the IB higher-level mathematics exam, or
2. Earning a 4 or 5 on the AP Calculus AB exam (or earning a 4 or 5 on the AB sub-score of the AP Calculus BC exam) and completing MA 139 (Calculus II), or
3. Completing one of several two-course mathematics options, described below.

Option 1: MA 123 and MA 126 (Applied Calculus for Business I and II)

- **Suitable audience:** Students interested in an applications-based applied calculus sequence who do not plan to pursue higher level mathematics electives or graduate school in a quantitative field.
- **Not suitable for:** Students who are considering majoring in data analytics, actuarial science, mathematical sciences or quantitative economics or who are interested in pursuing advanced mathematics courses as undergraduate or graduate students.
- **Course descriptions for MA 123/126:**
 - MA 123 introduces functions, graphs and differential calculus;
 - MA 126 introduces math of finance, integral calculus and probability.
- **Alternate version:** MA 123L/126L. Same text, same syllabus as MA 123/126, but meets an additional class period per week to allow for more in-class examples and practice.

Option 2: MA 131 and MA 139 (Calculus I and II)

- **Prerequisites:** Solid algebra skills and confidence working with trigonometric and other transcendental functions.
- **Suitable audience:** Students who:
 - Want to major in data analytics, actuarial science, mathematical sciences or quantitative economics and/or
 - Want a comprehensive grounding in calculus and/or
 - Want to keep open the options to take any upper level math course or graduate school in a quantitative field.
- **Course description for MA 131:** comprehensive coverage of single-variable differential calculus.

Option 3: MA 139 (Calculus II)

- **Prerequisite:** Earning a 4 or 5 on the AP Calculus AB exam or earning a 4 or 5 on the AB sub-score of the AP Calculus BC exam.
- **Alternative:** In exceptional cases, students without AP credit for MA 131 who are very confident in their knowledge of differential calculus may be granted permission to enroll in MA 139. In such a situation, students do not receive credit for MA 131, and must take a mathematical sciences elective to complete the two-course, first-year sequence. If interested in this option, email Prof. Roth (eroth@bentley.edu).
- **Course description for MA 139:** comprehensive coverage of single-variable integral calculus.

PLEASE NOTE:

- MA131 and MA139 are required for students who major in data analytics, actuarial science, mathematical sciences or quantitative economics; or minor in actuarial science or mathematical sciences.
- MA131 and MA139 are required as prerequisites for most of Bentley's upper level mathematics courses.
- MA131 and MA139 are sometimes required in graduate programs in quantitatively-oriented fields such as analytics, economics and finance.

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Contact information:

Professor Maar, Mathematical Sciences Placement Coordinator, Jennison 220 (zmaar@bentley.edu)

- for placement questions

Professor Roth, Actuarial and UG Analytics Program Director, Morison 388 (eroth@bentley.edu)

- for questions regarding the Actuarial Science, Data Analytics and Mathematical Sciences Majors