

**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, quantitative economics, or mathematical sciences 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, quantitative economics, or mathematical sciences 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, see or email Prof. Roth or Prof. Kimball.
- **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, quantitative economics, 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.

**Contact information:**

Professor Roth, Actuarial and UG Analytics Program Director, Morison 388 ([eroth@bentley.edu](mailto:eroth@bentley.edu)), for placement questions as well as questions regarding the Actuarial Science, Data Analytics and Mathematical Sciences Majors  
Professor Kimball, Mathematical Sciences Department Chair, Morison 394 ([lkimball@bentley.edu](mailto:lkimball@bentley.edu))

Professor Maar, Mathematical Sciences Placement Coordinator, Jennison 220 ([zmaar@bentley.edu](mailto:zmaar@bentley.edu)) Updated June 2020