

**Bentley University**  
**First Year Mathematics**

All Bentley University undergraduates are required to earn credit for at least one Mathematical Sciences course as part of their degree requirements. 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 one of the Higher Level IB mathematics exams (Mathematics; Mathematics: Analysis and Approaches; Mathematics: Applications and Interpretations), 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), or
3. Completing one of the course options, described below.

**MA 131 (Calculus I) or MA 131L\* (Calculus I with Lab)**

MA 131 is a traditional Calculus I course, focusing on single-variable differential Calculus and its applications.

- **Required for:** Students who plan to major in Data Analytics, Actuarial Science, Mathematical Sciences, or Quantitative Economics, or minor in Actuarial Science, Mathematics or Applied Statistics.
- **Recommended for:** Quantitatively oriented students interested in pursuing further math or considering graduate school in a quantitative field. An excellent choice for students who have taken calculus previously and did well but did not receive AP credit, and students who completed pre-calc very successfully.
- **Suggested qualifications:** Math SAT score of at least 660 (ACT 28) with a high GPA, or very strong performance in Pre-Calculus including trigonometry.

**MA 107 (Applied Calculus for Business) or MA 107L\* (Applied Calculus for Business with Lab)**

MA 107 is a one semester course covering the fundamentals of differential and integral Calculus. The course focuses on understanding of as well as the use of appropriate tools for business focused problems that involve principles of Calculus.

- **Recommended for:** Students interested in expanding their mathematical background to include common Calculus topics and their use in business. An excellent choice for students considering quantitative majors such as Finance and Economics.
- **Not suitable for:** Students who are considering majoring in Data Analytics, Actuarial Science, Mathematical Sciences, or Quantitative Economics, or minoring in Actuarial Science, Mathematics, or Applied Statistics, or who are interested in pursuing advanced mathematics courses as undergraduate or graduate students.
- **Suggested qualifications:** Math SAT score of at least 530 (ACT 21) or a high GPA, and completion of Pre-Calculus.

**MA 105 (Mathematical Foundations for Business) or MA 105L\* (Mathematical Foundations for Business with Lab)**

MA 105 develops quantitative reasoning skills with a focus on topics including linear programming, mathematics of finance and probability with relevance to business applications.

- **Recommended for:** Students interested in further developing quantitative problem-solving skills. A good choice for students who have not completed a Pre-Calculus course or have not taken math (other than statistics) for some time.
- **Not suitable for:** Students who are considering majoring in Data Analytics, Actuarial Science, Mathematical Sciences, or Quantitative Economics, or minoring in Actuarial Science, Mathematics, or Applied Statistics, or who are interested in pursuing advanced mathematics courses as undergraduate or graduate students.
- **Suggested qualifications:** Strong algebra skills but no background in Pre-Calculus.

\***Lab Courses designated with L** follow the same syllabus and textbook as correspondingly numbered non-lab sections but meet one additional class period per week to allow for more in-class examples and practice.

**PLEASE NOTE:**

- MA 131 is required for students who **major** in Data Analytics, Actuarial Science, Mathematical Sciences or Quantitative Economics, or **minor** in Actuarial Science, Mathematics, or Applied Statistics.
- MA 131 is required as a prerequisite for many of Bentley's upper level mathematics courses.
- MA 131 is 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 questions regarding the Data Analytics, Actuarial Science and Mathematical Sciences Majors

Professor Vaughan, Mathematical Sciences Department Chair, Morison 394 ([gvaughan@bentley.edu](mailto:gvaughan@bentley.edu))

Professor Maar, Mathematical Sciences Placement Coordinator, Jennison 220 ([zmaar@bentley.edu](mailto:zmaar@bentley.edu)) for placement questions