

ACTUARIAL SCIENCE (ACTSCI)

Actuarial Science Courses

ACTSCI 290 Introduction to Actuarial Science

3 cr. Undergraduate.

Overview of the actuarial profession, financial risks, and types of insurance products; risk components; and risk evaluation methods.

Prerequisites: completion of GER Quantitative Literacy Part A (QL-A) requirement, or Math Placement Level 30, or a grade of C or higher in any 100-level Math course (excluding MATH 194 or MATH 199) or MATH 111/PHILOS 111.

Last Taught: Fall 2025, Spring 2025, Fall 2024, Spring 2024.

Current Offerings: <https://catalog.uwm.edu/course-search/>

ACTSCI 391 Investment Mathematics I

4 cr. Undergraduate.

Examination of annuities, loans, bonds, portfolio immunization, and interest rate swaps. Foundational preparation for the Financial Mathematics (FM) Professional Actuarial Exam.

Prerequisites: a grade of C or better in MATH 211(P) or MATH 232(P).

Course Rules: Previously MATH 311.

Last Taught: Fall 2025, Spring 2025, Fall 2024, Spring 2024.

Current Offerings: <https://catalog.uwm.edu/course-search/>

ACTSCI 490 Introduction to Actuarial Practice

1 cr. Undergraduate.

Professional topics such as healthcare, pensions, life insurance, property and casualty, reinsurance, and regulation.

Prerequisites: ACTSCI 290(P).

Course Rules: May be retaken for cr once. Counts as repeat of MTHSTAT 591.

Last Taught: Fall 2025, Fall 2024, Fall 2023, Fall 2022.

Current Offerings: <https://catalog.uwm.edu/course-search/>

ACTSCI 491 Actuarial Workshop FM

1 cr. Undergraduate.

Continuation of topics from ACTSCI 391 along with practice and preparation for the Financial Mathematics (FM) Professional Actuarial Exam.

Prerequisites: ACTSCI 391(C) or consent of instructor.

Course Rules: Counts as a repeat of MTHSTAT 593. Retakeable up to 2 cr max.

Last Taught: Fall 2025, Spring 2025, Fall 2024, Spring 2024.

Current Offerings: <https://catalog.uwm.edu/course-search/>

ACTSCI 492 Actuarial Workshop P

1 cr. Undergraduate.

Continuation of probability topics from MTHSTAT 361 along with practice and preparation for the Probability (P) Professional Actuarial Exam.

Prerequisites: MTHSTAT 361(C) or consent of instructor.

Course Rules: Counts as a repeat of MTHSTAT 592. Retakeable up to 2 cr max.

Last Taught: Fall 2025, Spring 2025, Fall 2024, Spring 2024.

Current Offerings: <https://catalog.uwm.edu/course-search/>

ACTSCI 590 Actuarial Internship

1-6 cr. Undergraduate.

Apply principles and techniques of actuarial science in business, governmental and other appropriate settings.

Prerequisites: sophomore standing, 6 cr 300-level or above in ACTSCI or MTHSTAT, and GPA in ACTSCI and MTHSTAT courses at least 2.5.

Course Rules: One cr earned for academic work based on 40 hours in internship. May be retaken to 6 cr max.

Last Taught: Summer 2025, Summer 2024, Fall 2023, Summer 2023.

Current Offerings: <https://catalog.uwm.edu/course-search/>

ACTSCI 591 Investment Mathematics II

3 cr. Undergraduate.

Mathematical models in finance and economics, corporate finance.

Prerequisites: MTHSTAT 361(P); ACTSCI 391(P).

Course Rules: Counts as repeat of MTHSTAT 692.

Last Taught: Fall 2024, Fall 2022, Fall 2020.

Current Offerings: <https://catalog.uwm.edu/course-search/>

ACTSCI 593 Actuarial Models I

3 cr. Undergraduate.

Long term insurance coverage, single life survival models, life insurance, annuities, benefit and premium random variables, mortality models.

Prerequisites: ACTSCI 391(P), MTHSTAT 361(P), and MTHSTAT 362(C).

Course Rules: Counts as a repeat of MTHSTAT 691.

Last Taught: Fall 2025, Fall 2024, Fall 2023, Fall 2022.

Current Offerings: <https://catalog.uwm.edu/course-search/>

ACTSCI 594 Actuarial Models II

3 cr. Undergraduate.

Long term insurance coverage, single life survival models, life insurance, annuities, benefit and premium random variables, mortality models.

Prerequisites: ACTSCI 593(P); MTHSTAT 362(P).

Last Taught: Spring 2025, Spring 2023, Spring 2021.

Current Offerings: <https://catalog.uwm.edu/course-search/>

ACTSCI 596 Actuarial Statistics I

3 cr. Undergraduate.

Loss models for short term insurance and their statistical fitting.

Prerequisites: MATH 234(P) or MATH 240(P) and MTHSTAT 362(P).

Course Rules: Previously MTHSTAT 596.

Last Taught: Fall 2025, Fall 2024, Fall 2023, Fall 2021.

Current Offerings: <https://catalog.uwm.edu/course-search/>

ACTSCI 597 Actuarial Statistics II

3 cr. Undergraduate.

Credibility theory, ratemaking, and reserving.

Prerequisites: MATH 234(P) or MATH 240(P) and MTHSTAT 362(P).

Course Rules: Previously MTHSTAT 597.

Last Taught: Spring 2024, Spring 2022, Spring 2020, Spring 2018.

Current Offerings: <https://catalog.uwm.edu/course-search/>

ACTSCI 599 Capstone Experience

1 cr. Undergraduate.

Independent research on current financial and insurance topics that are not covered in regular actuarial courses.

Prerequisites: senior standing.

Course Rules: May be retaken for cr once.

Last Taught: Fall 2025, Spring 2025, Fall 2024, Spring 2024.

Current Offerings: <https://catalog.uwm.edu/course-search/>

ACTSCI 790 Actuarial Internship

1-6 cr. Graduate.

Apply principles and techniques of actuarial science in business, governmental and other appropriate settings.

Prerequisites: graduate standing.

Course Rules: One cr earned for academic work based on 40 hours in internship. May be retaken to 6 cr max.

Last Taught: Fall 2025, Summer 2025, Spring 2025, Summer 2024.

Current Offerings: <https://catalog.uwm.edu/course-search/>

ACTSCI 791 Investment Mathematics II

3 cr. Graduate.

Mathematical models in finance and economics, corporate finance.

Prerequisites: graduate standing.

Last Taught: Fall 2024, Fall 2022, Fall 2021, Fall 2020.

Current Offerings: <https://catalog.uwm.edu/course-search/>

ACTSCI 793 Actuarial Models I

3 cr. Graduate.

Long term insurance coverage, single life survival models, life insurance, annuities, benefit and premium random variables, mortality models.

Prerequisites: graduate standing.

Last Taught: Fall 2025, Fall 2024, Fall 2023, Fall 2022.

Current Offerings: <https://catalog.uwm.edu/course-search/>

ACTSCI 794 Actuarial Models II

3 cr. Graduate.

Long term insurance coverage, single life survival models, life insurance, annuities, benefit and premium random variables, mortality models.

Prerequisites: grad st; ACTSCI 593(P); MTHSTAT 362(P).

Last Taught: Spring 2025, Spring 2023, Spring 2021.

Current Offerings: <https://catalog.uwm.edu/course-search/>

ACTSCI 796 Actuarial Statistics I

3 cr. Graduate.

Loss models for short term insurance and their statistical fitting.

Prerequisites: graduate standing.

Last Taught: Fall 2025, Fall 2024, Fall 2023, Fall 2021.

Current Offerings: <https://catalog.uwm.edu/course-search/>

ACTSCI 797 Actuarial Statistics II

3 cr. Graduate.

Credibility theory, ratemaking and reserving.

Prerequisites: graduate standing.

Last Taught: Spring 2024, Spring 2022, Spring 2020.

Current Offerings: <https://catalog.uwm.edu/course-search/>

ACTSCI 891 Actuarial Risk Theory

3 cr. Graduate.

Risk models; premium principles; reinsurance contracts; ruin theory; ordering of risks; bonus-malus systems; IBNR techniques.

Prerequisites: grad st; MATH 571(P) & ACTSCI 596(P), or consent of instructor.

Course Rules: Previously MTHSTAT 795.

Last Taught: Spring 2024, Spring 2022, Fall 2019, Fall 2017.

Current Offerings: <https://catalog.uwm.edu/course-search/>

ACTSCI 895 Topics in Actuarial Science:

3 cr. Graduate.

Advanced topics in actuarial science.

Prerequisites: graduate standing; 6 credits of 700 level ACTSCI coursework.

Course Rules: Repeatable to 9 credits max. Counts as a repeat of MTHSTAT 896 with a similar topic.

Last Taught: Spring 2023, Spring 2021.

Current Offerings: <https://catalog.uwm.edu/course-search/>