

BUSINESS: ACTUARIAL SCIENCE, BBA

Actuarial science involves the construction and management of insurance and pension systems using knowledge from statistics/data science, mathematics, economics, finance, and computer science. The field of actuarial science centers on data analytics for risk assessment. The Actuarial Science (<https://business.wisc.edu/undergraduate/majors/actuarial-science/>) major curriculum prepares students for careers with insurance companies, consulting firms, healthcare organizations, and government organizations. Courses offered cover the material of the preliminary examinations of the Casualty Actuarial Society and the Society of Actuaries as well as more advanced subjects such as regression analysis, health analytics, and machine learning. Some of our actuarial courses allow students to earn credit for their professional exams by earning a minimum score in those courses (without taking the professional exam). While it is not required for students to sit for actuarial exams, more than 90% of our students will sit for at least two professional exams before they graduate.

MISSION

The actuarial science program distinguishes itself through leadership, innovation, community, connections, networks, and recognition of the quality of the faculty, the courses, and the students.

RELATED ORGANIZATIONS

Actuarial Club (<https://www.actuarialclubuw.org/>)
 Co-Curricular Learning Board (<https://business.wisc.edu/faculty-research/risk-insurance/learning-board/>)

HOW TO GET IN

HOW TO GET IN CURRENT UW-MADISON STUDENTS

Requirements	Details
How to get in	Application required. Meeting the requirements listed below does not guarantee admission. (https://admissions.wsb.wisc.edu/BbaPreBusiness (https://admissions.wsb.wisc.edu/BbaPreBusiness/))

Courses required to get in	Students are required to complete each of the 4 requirements below. Requirements can be completed via coursework, test credit, transfer work, or placement exam (if applicable).
	<p>Communication A</p> <ul style="list-style-type: none"> • ENGL 100 • COM ARTS 100 • ESL 118 • LSC 100 <p>Quantitative Reasoning A</p> <ul style="list-style-type: none"> • MATH 112 • MATH 114 • MATH 171 • COMP SCI/L I S 102 <p>Economics</p> <ul style="list-style-type: none"> • ECON 101 • ECON 111 <p>Human Behavior</p> <ul style="list-style-type: none"> • PSYCH 202 • SOC/C&E SOC 211 • ANTHRO 104 • GEN&WS 102 • HDFS 263

GPA requirements to get in Minimum 3.0 UW-Madison GPA.

Credits required to get in	<ul style="list-style-type: none"> • If you started at UW-Madison as a first-year student, 24 credits completed/in-progress at UW-Madison are required for application. • If you started at UW-Madison as a transfer student, 12 completed/in-progress at UW-Madison are required for application. • In-progress course credits towards this minimum must be completed at the end of the spring application term.
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Other	<ul style="list-style-type: none"> • Pre-Business 101 workshop required during the intended application year. • Pre-Business applicants may apply once within their first four terms (Fall/Spring) at UW-Madison, based on enrollment date. There is no credit maximum.
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Semester	Deadline to apply	Decision notification timeline
To apply for a fall start	Mid March	On or before July 1st.
To apply for a spring start	This program does not accept applications to start in the spring.	

To apply for a summer start This program does not accept applications to start in the summer.

PROSPECTIVE FIRST-YEAR APPLICANTS

All prospective UW–Madison students must apply through the central Office of Admissions and Recruitment (<https://www.admissions.wisc.edu/>). Prospective high school students may be considered for direct admission to Business based on their application to the University of Wisconsin–Madison. Simply list a Business interest as your top academic area of interest on the University application.

PROSPECTIVE TRANSFER APPLICANTS

Transfer students at University of Wisconsin System campuses or Wisconsin Technical Colleges may apply separately for admission to both the University of Wisconsin–Madison and the School of Business during the spring term for fall enrollment. Information for prospective transfer students can be found here: <https://business.wisc.edu/undergraduate/admissions/transfer-students/>.

ADDITIONAL INFORMATION

Students declared in Business: Actuarial Science cannot earn the Summer Certificate in Business Fundamentals, Certificate in Business, or the Certificate in Entrepreneurship due to curriculum overlap.

REQUIREMENTS

UNIVERSITY GENERAL EDUCATION REQUIREMENTS

All undergraduate students at the University of Wisconsin–Madison are required to fulfill a minimum set of common university general education requirements to ensure that every graduate acquires the essential core of an undergraduate education. This core establishes a foundation for living a productive life, being a citizen of the world, appreciating aesthetic values, and engaging in lifelong learning in a continually changing world. Various schools and colleges will have requirements in addition to the requirements listed below. Consult your advisor for assistance, as needed. For additional information, see the university Undergraduate General Education Requirements (<http://guide.wisc.edu/undergraduate/#requirementsforundergraduatestudytext>) section of the *Guide*.

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| General Education | <ul style="list-style-type: none"> • Breadth–Humanities/Literature/Arts: 6 credits • Breadth–Natural Science: 4 to 6 credits, consisting of one 4- or 5-credit course with a laboratory component; or two courses providing a total of 6 credits • Breadth–Social Studies: 3 credits • Communication Part A & Part B * • Ethnic Studies * • Quantitative Reasoning Part A & Part B * |
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* The mortarboard symbol appears before the title of any course that fulfills one of the Communication Part A or Part B, Ethnic Studies, or Quantitative Reasoning Part A or Part B requirements.

SCHOOL OF BUSINESS REQUIREMENTS

The Wisconsin Bachelor of Business Administration (BBA) program combines UW–Madison’s general liberal education requirements, broad coverage of core business disciplines, and cutting-edge signature courses to create a strong academic foundation upon which students delve deeply into their majors.

Code	Title	Credits
School of Business BBA Requirements		
Complete requirements: (http://guide.wisc.edu/undergraduate/business/#requirementsstext)		
	School of Business Liberal Studies Requirements	
	Business Fundamentals Requirement	
	Business Core Requirement	
	Business Signature Requirement	

BUSINESS: ACTUARIAL SCIENCE MAJOR REQUIREMENTS

The following courses are required for actuarial science majors. The Risk and Insurance Department also has course sequence information. Please be aware of stated prerequisites for major courses (including business core courses) that need to be completed before taking the course. Specific prerequisites can be found by clicking on the course number below.

Code	Title	Credits
ACT SCI 300	Probability for Actuaries	1
ACT SCI 303	Theory of Interest	3
ACT SCI 640	Actuarial Statistics for Risk Modeling	4
ACT SCI 650	Fundamentals of Long-Term Actuarial Modeling	3
ACT SCI 652	Fundamentals of Short-Term Actuarial Modeling	3
ACT SCI 651	Advanced Long-Term Actuarial Modeling	3
or ACT SCI 653	Advanced Short-Term Actuarial Modeling	
ACT SCI 654	Regression and Time Series for Actuaries ¹	3
or ACT SCI 655	Health Analytics	
or ACT SCI 657	Risk Analytics	
or GEN BUS 656	Machine Learning for Business Analytics	
Total Credits		20

RECOMMENDED ELECTIVES

Code	Title	Credits
MATH 234	Calculus--Functions of Several Variables	4
MATH 340	Elementary Matrix and Linear Algebra	3
R M I 300	Principles of Risk Management	3
FINANCE/ ECON 320	Investment Theory	3
COMP SCI 220	Data Science Programming I ¹	4

STAT 303 & STAT 304 & STAT 305	R for Statistics I and R for Statistics II and R for Statistics III	3
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¹ Recommended to take either COMP SCI 220 or the STAT 303, STAT 304, STAT 305 sequence.

UNIVERSITY DEGREE REQUIREMENTS

Total Degree To receive a bachelor's degree from UW–Madison, students must earn a minimum of 120 degree credits. The requirements for some programs may exceed 120 degree credits. Students should consult with their college or department advisor for information on specific credit requirements.

Residency Degree candidates are required to earn a minimum of 30 credits in residence at UW–Madison. "In residence" means on the UW–Madison campus with an undergraduate degree classification. "In residence" credit also includes UW–Madison courses offered in distance or online formats and credits earned in UW–Madison Study Abroad/Study Away programs.

Quality of Work Undergraduate students must maintain the minimum grade point average specified by the school, college, or academic program to remain in good academic standing. Students whose academic performance drops below these minimum thresholds will be placed on academic probation.

LEARNING OUTCOMES

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1. Recognize and explain the concept of risk, and apply the knowledge to the development of insurance products that are used to manage risk for the consumer as well as the risk of those products on the insurance organization.
2. Describe the actuarial profession, including the major professional organizations, the professional obligations of being an actuary, and the requirements to obtain and maintain a professional actuarial designation.
3. Demonstrate skills in critical thinking, quantitative analysis, and communication, as well as to develop an appreciation for actuarial theory, research, and the link to practical application.
4. Demonstrate the soft skills of being a professional.
5. Communicate their experiences and inspire others across the WSOB learning community.

FOUR-YEAR PLAN

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This is a **sample** four-year plan for students directly admitted into the School of Business from high school. We encourage all students to consult with their academic advisor to develop an individualized plan that meets their specific needs. Students must complete at least 120 total credits to be eligible for graduation.

Freshman

Fall	Credits Spring	Credits
MATH 221	5 MATH 222	4
ECON 101 or 111	4 ECON 102 or 111	4
GEN BUS 110	1 Communications A	3
Ethnic Studies	3 GEN BUS 106	1
Science	3 Humanities	3
	16	15

Sophomore

Fall	Credits Spring	Credits
ACT SCI 300	1 ACT SCI 303	3
STAT/MATH 309 or MATH 331	3 STAT/MATH 310 or GEN BUS 317	3
ACCT I S 100	3 FINANCE/ECON 300	3
M H R 300	3 R M I 300, REAL EST 306, INTL BUS 200, or INFO SYS 322 (Take One)	3
GEN BUS 250, 240, or 308 (Take One)	2 PHILOS 241, 243, 341, or 441 (Ethics)	3-4
GEN BUS 360	3	
	15	15-16

Junior

Fall	Credits Spring	Credits
ACCT I S 640	3 ACT SCI 652	3
GEN BUS 308, 240, or 250 (Take One)	2 ACT SCI 654, 655, 657, or GEN BUS 656	3
MARKETNG 300	3 OTM 300	3
ACCT I S 211	3 PSYCH 202, SOC 211, ANTHRO 104, GEN&WS 102, or HDF5 263 (Human Behavior)	3-4
Literature	3 Elective	3
	14	15-16

Senior

Fall	Credits Spring	Credits
ACT SCI 650	3 ACT SCI 651 or 653	3
GEN BUS 400	3 Science	3
GEN BUS 301	3 Elective	3
Elective	3 Elective	3
Elective	3 Elective	2
	15	14

Total Credits 119-121

ADVISING AND CAREERS

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Advising is an integral part of any student's educational journey in the School of Business Undergraduate Program. Starting at Student Orientation, Advising, and Registration (SOAR), we encourage all students to connect with academic advisors. Business academic advisors have a

wealth of knowledge about courses on campus, as well as policies and procedures.

Business career coaches help students with career exploration, internships, resumes, job search, interviewing, and more. We encourage students to connect with their career coach once they arrive on campus.

Business academic advisors and career coaches are passionate about student success. Students experiencing academic difficulty or personal struggles are encouraged to talk to their advisor about how their individual situation may affect their academic performance.

Assigned Academic and Career Coaches

Admitted business students will have one assigned academic advisor. Career coaches are assigned by academic major to be able to provide industry-specific career guidance. If a student has more than one major, they may have more than one assigned career coach. Students can find their assigned advisor and coach by logging into the Starfish portal through MyUW.

For students not yet admitted to the School of Business, there is a team of pre-business advisors available.

Accessing Advising

Drop-in advising and scheduled appointments are available for admitted business students. Pre-business students may also schedule an appointment with a pre-business academic advisor or utilize drop-in academic advising.

For more information on accessing academic advising, please see our Academic Advising page (<https://business.wisc.edu/undergraduate/academic-advising/>).

For more information on accessing career coaching, please see our Career Coaching page (<https://business.wisc.edu/undergraduate/careers/>).

Actuarial program faculty offer advising nights every fall semester to help students plan their course sequencing and professional exams.

CAREERS

Actuaries are problem solvers with expertise in understanding and managing financial risk. They use historical information and models to help predict the future. Actuaries may specialize in life and health (risk of illness, disability or death), pensions (develop and analyze retirement programs) or property and casualty (personal property risks and risks associated with businesses).

Some of our actuarial students utilize the analytical and technical skills they learn in the actuarial program and apply those skills to pursue data analytics or data science as a career. They may do this in the risk and insurance industry or in any industry that has the need to analyze, project and make decisions from large amounts of data.

Find out more about common industries and essential skills needed to be an actuary on the Undergraduate Actuarial Science website (<https://business.wisc.edu/undergraduate/majors/actuarial-science/>).

More information on Career Pathways (<https://business.wisc.edu/undergraduate/careers/pathways/>).

PEOPLE

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For more information about the faculty and their research interests, please visit the directory (<https://business.wisc.edu/directory/>).

CERTIFICATION/LICENSURE

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There are several exams and credentials from the Casualty Actuarial Society (<http://www.casact.org/>) and the Society of Actuaries (<https://www.soa.org>) that we prepare students to obtain during their undergraduate career. Students are encouraged to pass at least two actuarial exams before graduation in order to obtain an internship and/or job.

PROFESSIONAL CERTIFICATION/LICENSURE DISCLOSURE (NC-SARA)

The United States Department of Education (via 34 CFR Part 668 (<https://www.ecfr.gov/current/title-34/subtitle-B/chapter-VI/part-668/?toc=1>)) requires institutions that provide distance education to disclose information for programs leading to professional certification or licensure. The expectation is that institutions will determine whether each applicable academic program meets state professional licensure requirements and provide a general disclosure of such on an official university website.

Professional licensure requirements vary from state-to-state and can change year-to-year; they are established in a variety of state statutes, regulations, rules, and policies; and they center on a range of educational requirements, including degree type, specialized accreditation, total credits, specific courses, and examinations.

UW-Madison has taken reasonable efforts to determine whether this program satisfies the educational requirements for certification/licensure in states where prospective and enrolled students are located and is disclosing that information as follows.

Disclaimer: This information is based on the most recent annual review of state agency certification/licensure data and is subject to change. All students are strongly encouraged to consult with the individual/office listed in the Contact Information box on this page and with the applicable state agency for specific information.

The requirements of this program meet Certification/Licensure in the following states:

Wisconsin

The requirements of this program do not meet Certification/Licensure in the following states:

Not applicable

Updated: 1 June 2024

RESOURCES AND SCHOLARSHIPS

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If you are good at math and are interested in pursuing a career as an actuary, apply for our UW-Madison Actuarial Program Scholarship (<https://www.actuarialclubuw.org/future-members/>).

ACCREDITATION

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AACSB International–The Association to Advance Collegiate Schools of Business (<http://www.aacsb.edu/>)

Accreditation status: Accredited. Next accreditation review: 2026–2027.