

ACTUARIAL SCIENCE, BA

Risk analysts and actuaries are expected to earn professional designation from either the Society of Actuaries (<http://www.soa.org>) (life and health insurance) or the Casualty Actuarial Society (<http://www.casact.org>) (property and casualty insurance). These societies administer a series of examinations that lead to the risk analyst designation, or for actuaries, first to the designation of associate and then to fellow. The initial exams are the same for both societies. The courses required for the major and the minor will aid the student in preparing for the first two of the professional societies' examinations and will also satisfy their Validation by Educational Experience (VEE) (<https://www.soa.org/education/exam-req/edu-vee.aspx>) requirements in economics, corporate finance, and applied statistics.

Actuarial Science involves the application of probability theory and risk management to the areas of life and health insurance, property and casualty insurance, pension plans, and other employee benefit plans. Risk analysts and actuaries, who evaluate the long-term financial impact of these plans on both the issuing company and the purchaser or beneficiary of the plan, are employed by insurance companies, consulting firms, large corporations, and governmental agencies. The major in actuarial science emphasizes the mathematical theory that underlies risk evaluation.

Admission

Advanced placement in mathematics is possible for well-prepared students.

Standards

All courses presented for the major and the minor(s) must be completed with grades of C- or higher with an overall GPA of 2.0 or higher. A maximum of two grades of C- may be presented for the major. Repeated courses in the major or minor require specific approval of the department chair. The average grade for all courses taken in actuarial science and mathematics must be C- or higher. Note that although the major only requires a grade of C- or above for graduation, ECON 101 PRINCIPLES OF ECONOMICS I, ECON 102 PRINCIPLES OF ECONOMICS II, FIN 311 PRINCIPLES OF FINANCE, FIN 321 INVESTMENTS, and ACSC 349 REGRESSION & TIME SERIES must be passed with a grade of B- or above in order to fulfill Validation by Educational Experience (VEE) requirements for the CAS (Casualty Actuarial Society) and the SOA (Society of Actuaries). Students with a grade of C+ or below in any of ECON 101 PRINCIPLES OF ECONOMICS I, ECON 102 PRINCIPLES OF ECONOMICS II, FIN 311 PRINCIPLES OF FINANCE, FIN 321 INVESTMENTS, or ACSC 349 REGRESSION & TIME SERIES are strongly encouraged to retake the course in order to earn a grade of B- or above

Requirements

- At least four courses in Actuarial Science must be completed at Roosevelt University.
- The BA degree requires a Finance minor (for non-Business majors) (<http://catalog.roosevelt.edu/undergraduate/business/finance-minor-non-business-majors>).
- Students completing a Bachelor of Arts degree in Actuarial Science must take at least one professional exam prior to graduation. Proof should be submitted to the chair.

- All credit must be approved by the department to be applied toward the major.

Recommendations

- Appropriate supporting courses in computer science, economics, and finance are recommended.
- The one-credit course ACSC 101 ACTUARIAL CAREER is strongly recommended for all majors.
- Students should prepare to take an actuarial professional exam early in their degree plan, as this is often a requirement for actuarial internships.
- Students are encouraged to do an actuarial, financial, or statistical internship prior to graduation.

The major sequence for the Bachelor of Arts degree is given below.

Core		
MATH 231	CALCULUS I	5
MATH 232	CALCULUS II	5
MATH 233	CALCULUS III	3
ACSC 246	LINEAR ALGEBRA	3
ACSC 347	PROBABILITY THEORY	3
ACSC 348	MATHEMATICAL STATISTICS	3
ACSC 349	REGRESSION & TIME SERIES	3
ACSC 367	FINANCIAL MATH	3
ACSC 380FM	ACTUARIAL SCIENCE SEMINAR:EXAM FM/2	3
or ACSC 380P	ACTUARIAL SCIENCE SEMINAR: EXAM P/1	
CST 150	COMPUTER SCIENCE I	4
Select two of the following:		6
ACSC 309	DATA MINING	
ACSC 323	COOPERATION AND COMPETITION – GAME THEORY AND APPLICATIONS	
ACSC 328	LINEAR PROGRAMMING & OPTIMIZATION	
ACSC 366	ADVANCED EXCEL METHODS	
ACSC 369	MODELS FOR LIFE CONTINGENCIES	
ACSC 378	TOPICS IN ACTUARIAL MATH	
ACSC 380FM	ACTUARIAL SCIENCE SEMINAR:EXAM FM/2	
or ACSC 380P	ACTUARIAL SCIENCE SEMINAR: EXAM P/1	
VEE requirement (part of Finance minor)		
ECON 101	PRINCIPLES OF ECONOMICS I (fulfills portion of social science gen ed requirement)	3
ECON 102	PRINCIPLES OF ECONOMICS II (fulfills portion of social science gen ed requirement)	3
FIN 311	PRINCIPLES OF FINANCE	3
FIN 321	INVESTMENTS	3
Additional Courses for the Finance Minor		9
General Education, University Writing Requirement, and Electives		58
Total Credit Hours		120

General Education Requirements

Code	Title	Credit Hours
Academic Communities of Practice		
ACP 101	FIRST YEAR SEMINAR ¹	3
ACP 110	PRIMARY TEXTS	3
ACP 250	FOUNDATIONS FOR CHANGE	3
English Composition ²		
ENG 101	COMPOSITION I: CRITICAL READING & WRITING	3
ENG 102	COMPOSITION II: INTRODUCTION TO ACADEMIC RESEARCH	3
Humanities		
	Select 9 credits from the following subject areas: African-American Studies, Art History, English (excluding ENG 101 and ENG 102), History, Languages, Music, Philosophy, Theatre, Speech and Women's and Gender Studies	9
Mathematics		
MATH 110	QUANTITATIVE LITERACY (or above) ³	3
Non-Western requirement		
	Non-Western course (can be used for Humanities or Social Sciences general education requirements)	3
RU mission-related course ²		
LIBS 201	WRITING SOCIAL JUSTICE	3
Science		
	One biological science and one physical science required (at least one must be a four-hour lab (not applicable for science majors))	7-8
Social Sciences		
	Select 9 credits from the following subject areas: African-American Studies, Anthropology, Economics, History, Journalism, Philosophy, Political Science, Psychology, Sociology and Women's and Gender Studies	9
Total Credit Hours		49-50

¹ Required for students who enter RU with fewer than 12 credit hours

² Minimum grade of C- required

³ Math, Computer Science & Technology, and Science majors have different requirements—see advisor

These quantitative requirements also apply to degrees in the College of Arts and Sciences:

- Students may apply no more than 60 credit hours of 100-level courses toward the degree.
- Students must apply no fewer than 60 credit hours of 200- and 300-level courses toward the degree.
- Students must have at least 18 credit hours (of the 60 credit hours above) at the 300 level.
- Students may transfer in no more than 66 credit hours from community colleges.
- Students must take their final 30 hours at Roosevelt University. Note that some majors have additional requirements for RU hours.
- Students must have a grade point average of 2.0 or higher to graduate. Note that some majors have additional GPA requirements.
- Students must have a minimum of 90 hours in Arts and Sciences.

- Students may apply no more than 51 hours in the major (BA) or 57 hours in the major (BS)

Your degree map is a general guide suggesting courses to complete each term on the academic pathway to your degree. It is based on the most current scheduling information from your academic program. Your program's degree map is reviewed annually and updated as schedules change (although you retain the same course requirements as long as you are continuously enrolled in your degree program).

Always work closely with your academic advisor to understand curriculum requirements and scheduling, as each student's academic plan can look slightly different.

Year 1		
Fall	Credit Hours Spring	Credit Hours
ACP 101	3 ACP 110	3
ENG 101	3 ENG 102	3
ACCT 210	3 ECON 101	3
MATH 121	3 CST 150	4
ACSC 101	1 MATH 122	3
Physical Science ⁵	3	
		16

Year 2		
Fall	Credit Hours Spring	Credit Hours
LIBS 201 or ACP 250	3 ACP 250 or LIBS 201	3
ECON 102	3 FIN 301	3
MATH 231	5 MATH 232	5
ECON 234	3 ACSC 246	3
		14

Year 3		
Fall	Credit Hours Spring	Credit Hours
MATH 233	3 Humanities Course #2	3
ACSC 367	3 ACSC 380FM	3
FIN 311	3 ACSC 3XX ³	3
ACSC 349	3 FIN 321	3
Humanities Course #1	3 General Elective ¹	3
		15

Year 4		
Fall	Credit Hours Spring	Credit Hours
ACSC 347	3 ACSC 348	3
FIN 387 or FIN 3XX ³	3 ACSC 380P or ACSC 3XX ³	3
Biological Science Course ⁵	4 General Elective ¹	3
Humanities #3	3 General Elective ¹	3
Non-Western Studies Course ⁴	3 General Elective ¹	3
		16

Total Credit Hours 121

¹ Or course towards an optional Minor.

- ² Any course at the 200 Level within the discipline
- ³ Any course at the 300 Level within the discipline.
- ⁴ This requirement can be fulfilled by other requirements.
- ⁵ One Natural Science course must have a lab.