



BS in ACTUARIAL SCIENCE (695224) MAP Sheet

Department of Statistics

For students entering the degree program during the 2014–2015 curricular year.

UNIVERSITY CORE AND GRADUATION REQUIREMENTS				PROGRAM REQUIREMENTS (54 total hours)		
UNIVERSITY CORE REQUIREMENTS				No more than three hours of credit below C- is allowed in major courses.		
<u>Requirements</u>	<u>#Classes</u>	<u>Hours</u>	<u>Classes</u>	(Continued from previous column)		
Doctrinal Foundation				Students must pass Exam P of the Society of Actuaries (SOA) jointly administered as Exam 1 by the Casualty Actuarial Society (CAS) before declaring an actuarial science major.		
Book of Mormon	2	4.0	Rel A 121/H and 122/H	Stat 424	Statistical Computing	3.0
New Testament	1	2.0	Rel A 211/H or 212/H	Stat 431	Experimental Design	3.0
Doctrine and Covenants	1	2.0	Rel C 324/H or 325/H	Stat 435	Nonparametric Statistical Methods	3.0
The Individual and Society				Complete the following preparation core courses:		
Citizenship				Math 112*	Calculus 1	4.0
American Heritage	1–2	3–6.0	Econ 110* and one course from approved list	Math 113	Calculus 2	4.0
Global & Cultural Awareness	1	3.0	from approved list	Complete one course from the following:		
Skills				Stat 121	Principles of Statistics	3.0
Effective Communication				Stat 151	Intro to Bayesian Statistics	3.0
First-Year Writing	1	3.0	from approved list	Stat 201	Statistics for Engineers & Scientists	3.0
Adv Written & Oral Communication	1	3.0	from approved list	Stat 301	Statistics & Probability for Sec Ed	3.0
Quantitative Reasoning	1	4.0	Math 112*	Note: Students who have passed the AP statistics exam or an introductory statistics course should not take Stat 121.		
Languages of Learning (Math or Language)	1	4.0	Math 112*	Complete the following statistics core courses:		
Arts, Letters, and Sciences				Stat 123	Introduction to R Programming	1.5
Civilization 1 and 2	2	6.0	from approved list	Stat 124	SAS Base Programming Skills	1.5
Arts	1	3.0	from approved list	Stat 223	Applied R Programming	1.5
Letters	1	3.0	from approved list	Stat 224	Applied SAS Programming	1.5
Scientific Principles & Reasoning				Stat 230	Analysis of Variance	3.0
Biological Science	1–2	3–5.0	from approved list	Stat 240	Discrete Probability	3.0
Physical Science	1–2	3–7.0	from approved list	Stat 290	Communication of Statistical Results	1.0
Social Science	1	3.0	Econ 110*	Stat 330	Introduction to Regression	3.0
Core Enrichment: Electives				Stat 340	Inference	3.0
Religion Electives	3–4	6.0	from approved list	Complete the following:		
Open Electives	Variable	Variable	personal choice	Econ 110*	Economic Principles and Problems	3.0
GRADUATION REQUIREMENTS:				Stat 274	Theory of Interest	3.0
Minimum residence hours required		30.0		Complete 18 credit hours from the following two lists, with a minimum of 12 hours from list A:		
Minimum hours needed to graduate		120.0		A. Complete 12 hours from the following:		
				Stat 151	Introduction to Bayesian Statistics	3.0
				Stat 234	Methods of Survey Sampling	3.0
				Stat 370	Statistical Theory for Actuaries	3.0
				(Continued in next column)		
				Note: Courses used in List A will not double count in List B.		
				Recommended Courses:		
				It is recommended that students take Acc 200, Econ 110, and Fin 201 to complete the Society of Actuaries Economics and Corporate Finance VEEs.		

***THESE CLASSES FILL BOTH UNIVERSITY CORE AND PROGRAM REQUIREMENTS (7 hours overlap)**

FOR UNIVERSITY CORE OR PROGRAM QUESTIONS CONTACT THE ADVISEMENT CENTER

Physical and Mathematical Sciences College Advisement Center
N-181 ESC

Brigham Young University, Provo, UT 84602
Telephone: (801) 422-2674

FACULTY ADVISOR:

Del T. Scott
206 TMCB

Brigham Young University, Provo, UT 84602
Telephone: (801) 422-7054

**BS in ACTUARIAL SCIENCE (695224)
2014–2015**

Suggested Sequence of Courses:

FRESHMAN YEAR

<u>1st Semester</u>	
1 st Year Writing or American Heritage	3.0
Econ 110	3.0
Math 112* (FWSpSu)	4.0
Stat 121	3.0
Rel A 121 (FWSpSu)	2.0
Total Hours	15.0

2nd Semester

American Heritage or 1 st Year Writing	3.0
Math 113 (FWSpSu)	4.0
Stat 240	3.0
Rel A 122 (FWSpSu)	2.0
Phy S 100	3.0
Total Hours	15.0

SOPHOMORE YEAR

<u>3rd Semester</u>	
Stat 230	3.0
Stat 274	3.0
Stat 340	3.0
Global and Cultural Awareness	3.0
Rel A 211/212	2.0
General electives	1.0
Total Hours	15.0

Dept. recommendation: Register for and pass Exam P.

4th Semester

Stat 290	1.0
Stat 330	3.0
Stat 123 or 124	1.5
Stat 223 or 224	1.5
Letters	3.0
Rel C 324/325	2.0
General electives	3.0
Total Hours	15.0

Note 1: The sequence of courses suggested may not fit the circumstances of every student. Students should contact their college advisement center for help in outlining an efficient schedule.

Note 2: Students are encouraged to complete an average of 15 credit hours each semester or 30 credit hours each year, which could include spring and/or summer terms. Taking fewer credits substantially increases the cost and the number of semesters to graduate.

Department recommendation: Internship during Spring/Summer.

JUNIOR YEAR

<u>5th Semester</u>	
Stat 123 or 124	1.5
Stat 223 or 224	1.5
Biological Science	3.0
Advanced Written & Oral Communication	3.0
Civilization 1	3.0
Religion Elective	2.0
General electives	1.0
Total Hours	15.0

6th Semester

Actuarial elective	3.0
Actuarial elective	3.0
Actuarial elective	3.0
Civilization 2	3.0
Religion Elective	2.0
General elective	1.0
Total Hours	15.0

Department recommendation: Internship during Spring/Summer.

SENIOR YEAR

<u>7th Semester</u>	
Actuarial elective	3.0
Actuarial elective	3.0
Actuarial elective	3.0
Arts	3.0
Religion Elective	2.0
General electives	1.0
Total Hours	15.0

8th Semester

General electives	15.0
Total Hours	15.0

THE DISCIPLINE:

An actuary is a statistician who analyzes the financial consequences of risk. Actuaries use statistics, mathematics, and financial theory to study uncertain future events, especially those of concern to insurance and pension programs. They evaluate the likelihood of those events and design creative ways to reduce the likelihood and decrease the impact of adverse events that do occur. Their work designing and managing programs that control risk requires a combination of strong analytical skills, business knowledge, and understanding of human behavior.

CAREER OPPORTUNITIES:

Actuaries enjoy excellent job security, high incomes, and a low-stress work environment. Careers in actuarial science are consistently ranked among the top three professions. Competent actuaries are highly recruited and can have many professional opportunities. Actuaries are employed across a wide variety of industries and typically become established in one of the following career tracks: enterprise risk management, quantitative finance and investment, life insurance, health insurance, and retirement benefits. By focusing on development of data analysis skills, actuaries can also easily transition to business analytics settings.

ACTUARIAL EXAMS:

Actuaries are required to demonstrate their proficiency by passing a series of competency exams offered by one or more of the principal actuarial societies. It typically takes 6-10 years to pass all of the exams; virtually all entry level actuarial employees are required to have passed at least one of these exams as a condition for employment. The BYU Actuarial Science degree provides students with the opportunity to study significant portions of the material covered in the first four exams offered jointly by the Society of Actuaries and the Casualty Actuarial Society (the two major actuarial societies in the United States).

The correspondence between the actuarial exams and available BYU course work is roughly as follows:

- Exam P:* Math 112, 113, 314; Stat 240, 340 (full coverage)
- Exam FM:* Stat 274 (about 80% coverage)
- Exam C:* Stat 240, 340, 477 (about 85% coverage)

In addition to the exams the societies accept the following sets of courses for the Validation by Educational Experience (VEE) credit:

- Applied Statistical Methods VEE:* Stat 330 (has Stat 230 prereq.)
- Business VEE:* Fin 201 (has Acc 200 prerequisite)
- Economics VEE:* Econ 110

ADVISING:

SAS Certified Base Programmer and SAS Certified Advanced Programmer. Students can take the SAS Certification exams after completing Stat 124 and 125. Information and exam registration is available at <http://support.sas.com/certify/creds/index.html>.

SAS/BYU Applied Statistics and Advanced SAS Programming Certificate. Students who earn a B or higher in the applied and computing core classes (Stat 124, 125, 224, 230, 290, 330) are eligible to receive a certificate jointly issued by SAS and BYU which can be listed on a resume. More information is available at <http://statistics.byu.edu/content/sas-certificate-opportunities>.

Internships. The department maintains a list of companies that have hired BYU Actuarial Science students as interns in the last three years at: <http://statistics.byu.edu/content/actuarial-company-database>.

Department of Statistics
223 TMCB
Brigham Young University, Provo, UT 84602
Telephone: (801) 422-4505