IOWA

Department of Statistics & Actuarial Science

The University of Iowa is home to over 31,452 students. In the fall of 2023, there were 22,130 undergraduate students enrolled in the College of Liberal Arts. Currently, our department has 289 undergraduate students who have declared majors in actuarial science, actuarial science interest, data science and/or statistics.

Students interested in becoming actuaries should **declare** Actuarial Science as their **major** when they apply to the university.

Students who do well in prerequisite math courses tend to be most successful in Actuarial Science.

Students who **declare an Actuarial Science** major are advised by the Academic Advising Center located in the Pomerantz Center. After receiving 30 semester hours they are transferred to our professional advisors.

We also have a graduate program in Actuarial Science and many students continue on and work towards a PhD in Statistics with the emphasis of Actuarial Science.

Department of Statistics & Actuarial Science
Declared Majors- Fall 2023

Graduate Students	USA	International	Total
Total Number in Graduate Program	**30**	**38**	**68**

PhD	USA	International	Total
1st Year	0	5	5
Continuing Students	3	5	8
Total	3	10	13

MS Statistics	USA	International	Total
1st Year	2	3	5
Continuing Students	3	6	9
Total	5	9	14

MS Actuarial Science	USA	International	Total
1st Year	1	1	2
Continuing Students	3	5	8
Total	4	6	10

MS Data Science	USA	International	Total
1st Year	2	10	12
Continuing Students	3	2	5
Total	5	12	17

BS/MS U2G Data Science	USA	International	Total
1st Year	10	0	10
Continuing Students	3	0	3
Total	13	0	13

BS/MS U2G Statistics (Nankai)	USA	International	Total
1st Year	0	1	1
Continuing Students	0	0	0
Total	0	1	1

Undergraduate Students			
Total Number in Undergraduate Program Declared	USA	International	Total
Total Number	**281**	**8**	**289**

Statistics	USA	International	
Primary Program Declared	44	3	47
Secondary Program Declared	25	2	27
Total Declared	69	5	74

Actuarial Science	USA	International	Total
Primary Program Declared	31	0	31
Secondary Program Declared	2	0	2
Total Declared	33	0	33

Actuarial Science Interest	USA	International	Total
Primary Program Declared	59	0	59
Secondary Program Declared	22	0	22
Total Declared	81	0	81

Data Science	USA	International	Total
Primary Program Declared	55	3	58
Secondary Program Declared	15	0	15
Total Declared	70	3	73

Additional Undergraduate	USA	International	Total
Statistics Minors Declared	28	0	28

Requirements for a Bachelor's Degree

The College of Liberal Arts and Sciences awards Bachelor of Arts (BA), Bachelor of Science (BS), Bachelor of Fine Arts (BFA), and Bachelor of Music (BM) degrees.

To earn a Bachelor's Degree, you must:
- Complete a minimum of **120** semester hours of credit towards graduation
- Satisfy the UI and CLAS residence requirement
- Complete the requirements of the General Education Program
- Complete a major
- Meet the College's academic standards

NOTE: Effective with spring 2019 registration for summer and fall 2019, all CLAS students must have a major declared by the time the student has earned 60 semester hours. In other words, a student who has earned 60 s.h. but does not have a major declared will not be able to register for summer or fall 2019.

Actuarial Science Faculty

Dr. Elias Shiu

Professor and Collegiate Fellow
Office: 362 Schaeffer Hall
PhD, California Institute of Technology, 1975
Principal Financial Group Professor of Actuarial Science
Research Interests: Asset/Liability Management, Mathematical Finance, Risk Theory
http://www.stat.uiowa.edu/~eshiu/
elias-shiu@uiowa.edu
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Dr. N.D. Shyamalkumar

Associate Professor
Office: 208 Schaeffer Hall
PhD, Purdue University, 1996
shyamal-kumar@uiowa.edu
Research Interests: Actuarial Science
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Phone: (319) 335-1980

Dr. Zhiwei (Josh) Tong

Assistant Professor
Office: 374 Schaeffer Hall
PhD School of Risk and Actuarial Studies at UNSW Sydney, August 2021
Research Interests: credit portfolio losses, financial networks and systemic risk, and insurance under information asymmetry
zhiwei-tong@uiowa.edu
Phone: (319) 467-0160

Distinguished History – Promising Future

The University of Iowa has the second oldest actuarial science program in the U.S.A. It began with the course "The Mathematical Theory of Insurance," taught by Dr. Westfall, in academic year 1902/1903. Since 1913, actuarial science courses have been taught every year at UI. Five past presidents of the Society of Actuaries and two past presidents of the Casualty Actuarial Society were UI students.

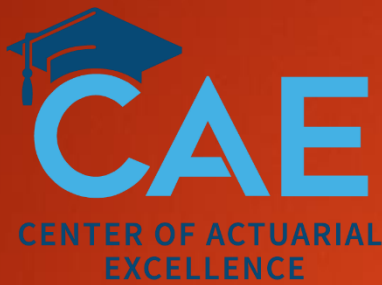In 2016 Remin University of China sponsored the *Gerber-Shiu Workshop in honor of Dr. Shiu.*

SOCIETY OF ACTUARIES

FOUNDATIONS	ACTUARIAL I	ACTUARIAL II	ADVANCED	PROFESSIONALISM
EXAM FINANCIAL MATHEMATICS	**EXAM** FUNDAMENTALS OF ACTUARIAL MATHEMATICS	**EXAM** ADVANCED LONG-TERM ACTUARIAL MATHEMATICS **OR** ADVANCED SHORT-TERM ACTUARIAL MATHEMATICS	**e-LEARNING** FUNDAMENTALS OF ACTUARIAL PRACTICE	**SEMINAR** ASSOCIATESHIP PROFESSIONALISM COURSE
EXAM PROBABILITY	**VEE** MATHEMATICAL STATISTICS			
VEE ECONOMICS		**EXAM** PREDICTIVE ANALYTICS	**e-LEARNING** ADVANCED TOPICS IN PREDICTIVE ANALYTICS	
VEE ACCOUNTING AND FINANCE	**EXAM** STATISTICS FOR RISK MODELING			
e-LEARNING PRE-ACTUARIAL FOUNDATIONS	**e-LEARNING** ACTUARIAL SCIENCE FOUNDATIONS			

Risk is Opportunity

CAE | UEC

CENTER OF ACTUARIAL EXCELLENCE | UNIVERSITY-EARNED CREDIT

SOCIETY OF ACTUARIES®

CURRENT	NEW
VEE Economics	VEE Economics
VEE Accounting and Finance	VEE Accounting and Finance
VEE Mathematical Statistics	VEE Mathematical Statistics
Exam P – 3 hours MC*	Exam P – 3 hours MC
Exam FM – 3 hours MC	Exam FM – 3 hours MC
Exam IFM – 3 hours MC	**Exam removed**
Exam LTAM – 4.25 hours MC and WA* Exam STAM – 3.5 hours MC	Exam FAM – 3.5 hours MC Exam ALTAM or ASTAM – 2.5-3.0 hours WA
Exam SRM – 3.5 hours MC	Exam SRM – 3.5 hours MC
Exam PA – 5.25 hours WA	Exam PA – 5.25 hours WA
n/a	Exam ATPA – TH*
n/a	Pre-Actuarial Foundations e-Learning Module – TH
n/a	Actuarial Science Foundations e-Learning Module – TH
FAP – eight TH assessments	FAP – five TH assessments
APC – Seminar	APC - Seminar

*MC = multiple choice   WA = proctored written-answer   TH = take home written-answer

Required Courses for Actuarial Science Major

- CS:1210 Computer Science I: Fundamentals (4 s.h.)
- MATH:1850 Calculus I (4 s.h.)
- MATH:1860 Calculus II (4 s.h.)
- MATH:2700 Introduction to Linear Algebra (4 s.h.)
- MATH:2850 Calculus III (4 s.h.)
- MATH:3770 Fundamental Properties of Spaces and Functions I (4 s.h.)
- STAT:3100 Introduction to Mathematical Statistics I (3 s.h.)
- STAT:3101 Introduction to Mathematical Statistics II (3 s.h.)
- STAT:4100 Mathematical Statistics I (3 s.h.)
- STAT:4101 Mathematical Statistics II (3 s.h.)
- ACTS:3080 Mathematics of Finance I (3 s.h.)
- ACTS:4130 Quantitative Methods for Actuaries (3 s.h.)
- ACTS:4150 Fundamentals of Short-term Actuarial Mathematics (3 s.h.)
- ACTS:4180 Life Contingencies I (3 s.h.)
- ACTS:4280 Life Contingencies II (3 s.h.)

The University of Iowa

University-Earned Credit Courses Exam Course(s)

- FM (Financial Mathematics) ACTS:3080
- FAM (Fundamentals of Actuarial Mathematics) ACTS:4130, 4150
- SRM (Statistics for Risk Modeling) STAT:4560, 4561
- ALTAM (Advanced Long-Term Actuarial Mathematics) ACTS:4280

Sample Schedule for a student who needs to start from Calculus I.

Year	Fall Semester	Spring Semester
1	MATH:1850 Calculus I CS:1210 Computer Science I: Fundamentals ACTS:1001 Introductory Seminar Actuarial Science	MATH:1860 Calculus II MATH:2700 Introduction to Linear Algebra Mathematical Statistics II ACTS:3080 Mathematics of Finance I (or wait until 2nd year)
2	MATH:2850 Calculus III STAT:3100 Introduction to Mathematical Statistics I	MATH:3770 Fundamental Properties of Spaces and Functions I STAT:3101 Introduction to Mathematical Statistics II ACTS:3080 Mathematics of Finance I
3	STAT:4100 Mathematical Statistics I ACTS:4130 Quantitative Methods for Actuaries FIN:3300 Corporate Finance	STAT:4101 Mathematical Statistics II ACTS:4180 Life Contingencies I ACTS:4380 Mathematics of Finance II
4	ACTS:4280 Life Contingencies II STAT:4560 Statistics for Risk Modeling	ACTS:6200 Predictive Analytics STAT:4561 Statistics for Risk Modeling II

Sample Schedule for a student who needs to start from Calculus II.

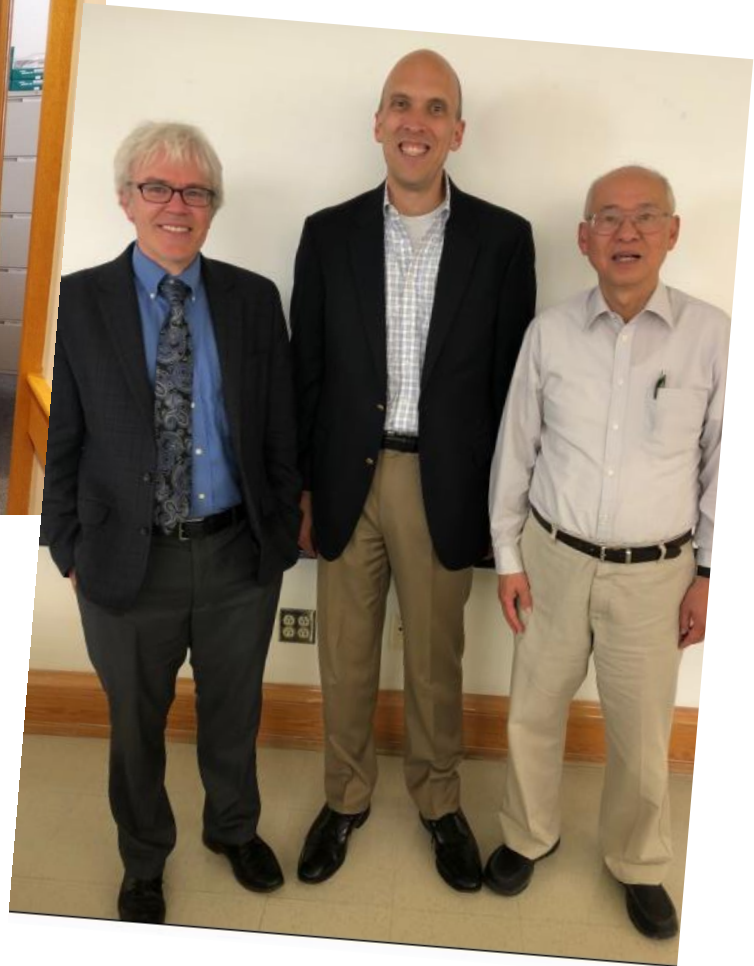| Year	Fall Semester	Spring Semester
1	MATH:1860 Calculus II CS:1210 Computer Science I: Fundamentals ACTS:1001 Introductory Seminar Actuarial Science STAT:3100 Introduction to Mathematical Statistics (or wait until 2nd year)	MATH:2850 Calculus III ACTS:3080 Mathematics of Finance I ACTS:3080 Mathematics of Finance I
2	MATH:2700 Introduction to Linear Algebra STAT:3100 Introduction to Mathematical Statistics I	MATH:3770 Fundamental Properties of Spaces and Functions I STAT:3101 Introduction to Mathematical Statistics II
3	STAT:4100 Mathematical Statistics I ACTS:4130 Quantitative Methods for Actuaries FIN:3300 Corporate Finance	STAT:4101 Mathematical Statistics II ACTS:4180 Life Contingencies I ACTS:4150 Fundamentals of Short-term Actuarial Math
4	ACTS:4280 Life Contingencies II STAT:4560 Statistics for Risk Modeling	ACTS:6200 Predictive Analytics STAT:4561 Statistics for Risk Modeling II

SOA Examinations	UI Courses
Probability **(P)**	STAT:3100 and/or 4100; ACTS:3110
Financial Mathematics **(FM)**	ACTS:3080
Fundamentals of Short-Term Actuarial Mathematics **(FAM-S)**	STAT:4101 or 5101; ACTS:4150
Fundamentals of Long-Term Actuarial Mathematics **(FAM-L)** & Advanced Long-Term Actuarial Mathematics (**ALTAM)**	ACTS:4130, 4180 & 4280; STAT:4101
Statistics for Risk Modeling **(SRM)**	STAT:4560, 4561,4101
Predictive Analytics **(PA)** which is about computer applications of the theory in SRM.	ACTS:6200

VEE	UI Courses
Economics	ECON:1100, 1200 or ECON:3100, 3150
Accounting & Corporate Finance	ACCT:2100, FIN:3000 or 3300
Mathematical Statistics	STAT:3101 or STAT:4101 or 5101

In the forefront of actuarial folklore stands the belief that the actuarial examinations constitute a mystery impenetrable by mortal man.

Charles A. Spoerl, *Transactions of the Society of Actuaries*, Volume 1 (1949)

Terry Lillis, (MS 1982)

CFO, Principal Financial (retired), Des Moines, Iowa

Eric Palmer, (BS 1988)
President and CEO,
EVERNORTH, Cigna
Company in Ellington,
Connecticut

Great to have former alumni visit with our students!

We have amazing student leadership on campus.

2024 Actuarial Science Club Board

If you're a student (undergraduate or graduate student) who is majoring in Actuarial Science and/or Actuarial Science Interest, you are automatically a member of the Actuarial Science Club! All students are added to our mailing list that students share information about social and educational activities.

- President: Sam Reckamp
- VP of Finance: Maggie Russ
- VP of Media: Emily Davis
- VP of Social Programming: Nate Reed
- VP of Alumni Relations: Kael Christensen
- Underclassman Ambassador: Tyler Dill

Annual Job Fair!

Forty companies to come to our 2023 Actuarial Science, Risk Management & Analytics Job Fair in October 2023. Our students are encouraged to attend this fair to learn more about the opportunities these fine companies offer. In the days and weeks that follow many will have follow-up interviews seeking internship and job opportunities. We are so appreciative to the wonderful support and organization by our Pomerantz Career Center Team to make this such as successful event! Our next job fair is in September, 2024.

This is just a snapshot of our graduates!

Actuarial Science Graduates

Students	Majors, Minors and Certificate Programs	Initial Placement
Cody Borst	Actuarial Science and Mathematics	Transamerica, Cedar Rapids, IA
Erich Byers	Actuarial Science and Mathematics	Transamerica, Cedar Rapids, IA
Clarisse Chia	Actuarial Science and Mathematics	Pursuing MS at the University of Iowa
Michelle Croghan	Actuarial Science, Mathematics, Statistics, Business Administration (Minor)	Athene, West Des Moines, IA
Justin Dickinson	Ancient Civilization (Minor), (H) Actuarial Science, Mathematics and Statistics	Ernst & Young, Chicago, IL
Jiashuo Du	Actuarial Science and Mathematics (Minor)	Graduate Program in Finance at UI, Iowa City, IA
Nathan Halko	Actuarial Science and Mathematics	Global Atlantic Financial Group, Des Moines, IA
Leah Klejch	Actuarial Science, Mathematics, and Business Administration (Minor)	Willis, Towers and Watson, Chicago, IL
Jason McDowell	Actuarial Science and Computer Science	Berkshire Hathaway Homestate Companies, Omaha, NE
Max Peterson	(H) *** Actuarial Science, *** Mathematics and Risk Management and Insurance (Certificate)	Allstate Insurance, Chicago, IL
Meng Qi	Actuarial Science, Mathematics and Statistics	Fidelity Investments, Chicago, IL
Jonathan Reinhart	(H) Actuarial Science, Computer Science and Mathematics (Minor)	Blue Cross & Blue Shield, Chicago, IL
Jacob Schmitt	(H) Actuarial Science, and Mathematics	Principal, Des Moines, IA
Yaodong Shen	Actuarial Science and Mathematics	Graduate Program in Applied Business Analytics, Boston University
Andrew Sherer	Actuarial Science and Certificate in Risk Management and Insurance	Transamerica, Cedar Rapids, IA
Connor Vandersnick	Actuarial Science and Mathematics (Minor)	Global Atlantic, New York City

This is just a snapshot of our internships!

Internships

Name	Company	Location
Collin Abeln	Global Atlantic Financial Group	New York, NY
Carter Burns	Transamerica	Cedar Rapids
Alec Ciaccio	Transamerica	Cedar Rapids
Ashton Cracraft	Transamerica	Cedar Rapids
Kiersten Dey	The Hartford	Hartford, CT
Angela Fiore	Athene	Des Moines, IA
Nicole Gonner	Transamerica	Denver
Sean Godkin	Reinsurance Group of America	St Louis
Matthew Kulczak	Allianz	Munich, Germany
Tina Liu	Pacific Life	Newport Beach, CA
Ivan Morales	Country Financial	Bloomington, IL
Mason Newhard	Transamerica	Iowa City
Morgan Novak	Global Atlantic Financial Group	Des Moines, IA
Nick Odegaard	Global Atlantic Financial Group	Des Moines
Nathan Promes	Athene	Des Moines
Rachel Rinehart	Athene	Des Moines
Mitch Tamashunas	Prudential Financial	Newark, NJ
Simeon Taylor	Southern Farm Bureau Life Insurance Company	Jackson, Mississippi
Sam Werner	Cigna	Denver, CO

Scholarships & Awards

Charles Wilson (BA, 1941) attended The University of Iowa during the Depression only because of a scholarship. He was an actuary for 45 years. He established this fund because he wanted to give future students the same opportunity he had and to help the actuarial profession.

Over $350,000 has been awarded to over 50 deserving students based upon academic merit for 2023-24.

The department has additional scholarship and awards: Lloyd Knowler Scholarship, Principal Financial Group Foundation Scholarship, Harold W. Schloss Memorial Scholarship, D. W. Simpson & Company Scholarship, Peterson, Patterson and the Transamerica Scholarship.

In addition, students may receive a Taylor Award in Academic Performance. We also often nominate students for the Society of Actuaries Diversity, Huntington and Actuary of Tomorrow awards.

Career Placement

Below is the list of employers that came to our annual **Actuarial Science, Insurance and Risk Management Career Fair** on October 12, 2023

Allianz Life
American Equity Investment Life Insurance Company
Aon
Assurance, a Marsh & McLennan Agency
Athene USA
BITCO Insurance Companies
Captive Resources, LLC
Cottingham & Butler
Country Financial
Emergent Holdings
F&G Annuities & Life
Farm Bureau Financial Services
Fidelity Investments
Gallagher
Global Atlantic Financial Group
Holmes Murphy & Associates
IMT Insurance
Kunkel & Associates, Inc.
Lockton
National Indemnity Company
New York Life Insurance Company
Northwestern Mutual - Eastern Iowa
Old Republic International
Pacific Life
Principal Financial Group- Corporate Headquarters
Sammons Financial Group
Sentry
The Accel Group

Transamerica
Travelers
TruStage
UFG Insurance
W. R Berkley

"The insurance industry is a central driver of Iowa's economy, and plays a key role in the economic well-being of Iowans. Our insurance companies employ more than 60,000 Iowans, providing high-quality jobs across numerous sectors, including healthcare, life, property and casualty, and financial services. As the study shows, the insurance industry represents 11% of our GDP, cementing Iowa as a national insurance leader."

-Governor Kim Reynolds