Department of Statistics & Actuarial Science

The University of Iowa is home to over 29,598 students. In the spring of 2021, the College of Liberal Arts had 13,555 students enrolled. Currently our department has 100 undergraduate students who have declared actuarial science or actuarial science interest, 54 students have declared statistics, and 32 students in data science.
Due to the demanding nature of the Actuarial Science major and the difficulty of the professional examinations, the department maintains a selective admission program for Actuarial Science. **Students must apply and be admitted to the major.**

Students interested in becoming actuaries should **declare** an Interest in Actuarial Science as their major when they enter the university. Students who do well in prerequisite math courses tend to be most successful in Actuarial Science.

Students who **declare an Actuarial Science Interest** major are advised by the Academic Advising Center located in the Pomerantz Center. Students who have declared an interest in the major, prior to admission, are included in all departmental activities.

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- Spring 2022

**UI Official Count**  
**Day:** 02/01/2022

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<th>Graduate Students</th>
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<td></td>
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<td><strong>Additional Undergraduate Students</strong></td>
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<td>Statistics Minors Declared</td>
<td>40</td>
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*Note: Gender count is not available. The University of Iowa recognizes 8 gender categories.*
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 2021 registration for summer and fall 2021, 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 2022.
Faculty teach all of our courses at the University of Iowa.

Actuarial Science Faculty

**Dr. Ambrose Lo**
Assistant Professor  
Fellow, Society of Actuaries  
Chartered Enterprise Risk Analyst  
Ph.D. University of Hong Kong, Hong Kong  
ambrose-lo@uiowa.edu  
Phone: (319) 335-1915  
Office: 368 Schaeffer Hall  
Research Interests: Dependence Structures, Risk Measures, Quantitative Risk Management  
Academic web page: https://sites.google.com/site/ambroseloyo/  

**Dr. Elias Shiu**
Professor  
Office: 362 Schaeffer Hall  
Ph.D, California Institute of Technology, 1975  
Principal Financial Group Professor of Actuarial Science  
Research Interests: Asset/Liability Management, Mathematical Finance, Risk Theory  
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elias-shiu@uiowa.edu  
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**Dr. N.D. Shyamalkumar**
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Office: 208 Schaeffer Hall  
Research Interests: Actuarial Science  
http://www.stat.uiowa.edu/~ns/shyamal/  

**Dr. Zhiwei Tong**
Assistant Professor  
PhD, School of Risk and Actuarial Studies at UNSW Sydney, August 2021  
zhiwei-tong@uiowa.edu  
Research Interests: credit portfolio losses, financial networks and systemic risk, and insurance under information asymmetry
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.
2018 CAS BASIC EDUCATION GUIDE

In principle and in practice, the CAS is the gold standard for the property and casualty actuarial profession. With more than 100 years of experience and expertise, the CAS continues to focus on comprehensive exams and education that are uniquely relevant to property and casualty actuaries. Our CAS credentialing program is the program of choice for attracting top candidates and meeting employers’ needs.

THE CAS PATH TO SUCCESS:

BEGIN
EXAM 1 Probability*
Validation by Educational Experience (VEE)*
- Accounting and Corporate Finance
- Economics

NEW JOB!
EXAM 3F Investment and Financial Markets*

ONLINE COURSES
- Risk Mgmt. & Insurance Ops.
- Insurance Accounting & Coverage Analysis, Insurance Law, & Insurance Regulation

MAS-I Modern Actuarial Statistics I
MAS-II Modern Actuarial Statistics II

EXAM 5 Basic Techniques for Ratemaking and Estimating Claim Liabilities
EXAM 6 Regulation & Financial Reporting (Nation-Specific)

CONGRATS
You Have Completed the Preliminary Requirements!

COURSE ON PROFESSIONALISM

EXAM 7 Estimation of Policy Liabilities, Insurers, Valuation & ERMI

EXAM 8 Advanced Ratemaking
EXAM 9 Financial Risk & Rate of Return

CONGRATS
You Have Achieved the FCAS Credential!!

Visit CASstudentcentral.org and casact.org for more information on the CAS Education System

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Change is coming soon!!

Risk is Opportunity
Sample Schedule for a student who needs to start from Calculus I. (Does not include Gen Ed. classes)

<table>
<thead>
<tr>
<th>Year</th>
<th>Fall Semester</th>
<th>Spring Semester</th>
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</table>
| 1    | MATH:1850 Calculus I  
       CS:1210 Computer Science I: Fundamentals | MATH:1860 Calculus II  
       MATH:2700 Introduction to Linear Algebra |
| 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 or ACTS:4150 |
| 4    | ACTS:4280 Life Contingencies II  
       ACTS:6200 Predictive Analytics (spring 2023) |
Sample Schedule for a student who needs to start from Calculus II. (Does not include Gen Ed. classes)

<table>
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<th>Spring Semester</th>
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| 1    | MATH:1860 Calculus II  
MATH:2700 Introduction to Linear Algebra |
| 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 |
| 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  
ACTS:6200 Predictive Analytics (spring 2023) |
## UI Courses and Examinations

### SOA Examinations

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<th>SOA Examinations</th>
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<td><strong>P Probability</strong></td>
<td>STAT:3100, 4100, ACTS:3110</td>
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<tr>
<td><strong>FM Financial Mathematics</strong></td>
<td>ACTS:3080</td>
</tr>
<tr>
<td><strong>IFM Investment &amp; Financial Markets offered until Nov. 2022</strong></td>
<td>FIN:3300</td>
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<tr>
<td><strong>FAM-S Short-Term Actuarial Mathematics</strong></td>
<td>ACTS:4150 (in spring 2023)</td>
</tr>
<tr>
<td></td>
<td>STAT:4101 or 5101</td>
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<tr>
<td><strong>FAM-L Long-Term Actuarial Mathematics</strong></td>
<td>STAT:4101, ACTS:4130, 4180, 4280</td>
</tr>
<tr>
<td><strong>SRM Statistics for Risk Modeling</strong></td>
<td>STAT:4540, 4561</td>
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### VEE

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<th>VEE</th>
<th>UI Courses</th>
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<tr>
<td><strong>Economics</strong></td>
<td>ECON:1100, 1200 or ECON:3100, 3150</td>
</tr>
<tr>
<td><strong>Accounting &amp; Corporate Finance</strong></td>
<td>ACCT:2100, FIN:3300</td>
</tr>
<tr>
<td><strong>Mathematical Statistics</strong></td>
<td>STAT:3101 or STAT:4101 or 5101</td>
</tr>
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</table>
In the forefront of actuarial folklore stands the belief that the actuarial examinations constitute a mystery impenetrable by mortal man.


Terry Lillis, (MS 1982)
CFO, Principal Financial, Des Moines, Iowa

Great to have former alumni visit with our students! They include the past President of the SOA and countless business leaders.
We have amazing student leadership on campus.

2022 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! The club has a ICON (Iowa Courses Online) site and a Facebook page: (https://www.facebook.com/groups/163654807082416/)

and students are added to our mailing list (that the department sends out) that students share information.
2022 Job Fair!

We expect over 30 companies to come to our 2022 Actuarial Science, Risk Management & Analytics Job Fair in September 2022. 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!
This is just a snapshot of our graduates!

## 2019-20 Actuarial Science Graduates

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<tr>
<th>Students</th>
<th>Program</th>
<th>Initial Placement</th>
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<tr>
<td>Collin Davis Abeln</td>
<td>(H)** BS Actuarial Science, (H) *** BA Mathematics, Spanish (Minor); and (H) *** BS Statistics</td>
<td>Global Atlantic Financial, New York, NY</td>
</tr>
<tr>
<td>Carter Joseph Burns</td>
<td>*** BS Actuarial Science, *** BA Mathematics and *** BS Statistics</td>
<td>State Farm, Bloomington, IL</td>
</tr>
<tr>
<td>Kevin Andrew Cai</td>
<td>BA Mathematics, BS Statistics and Risk Management and Insurance (Certificate)</td>
<td>American Equity Investments, West Des Moines, IA</td>
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<tr>
<td>Yuxin Chang</td>
<td>BS Actuarial Science, BA Mathematics and Risk Management and Insurance (Certificate)</td>
<td>Pursuing MS in Finance at UI</td>
</tr>
<tr>
<td>Sean Jordan Godkin</td>
<td>BS Actuarial Science, BA Computer Science and BA Mathematics</td>
<td>Transamerica, Cedar Rapids, IA</td>
</tr>
<tr>
<td>Nicole Karen Gonner</td>
<td>BS Actuarial Science, BA Mathematics and Risk Management and Insurance (Certificate)</td>
<td>Farm Bureau, West Des Moines, IA</td>
</tr>
<tr>
<td>Edward J Helm</td>
<td>BS Actuarial Science, BA Mathematics and BS Statistics</td>
<td>Global Atlantic Financial Group, Des Moines, IA</td>
</tr>
<tr>
<td>Drew James Hoeger</td>
<td>** BS Actuarial Science, Business Administration (Minor), ** BA Mathematics and ** BS Statistics</td>
<td>Athene, West Des Moines, IA</td>
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<td>Connor David Kozicki</td>
<td>BA Mathematics, BS Statistics and Risk Management and Insurance (Certificate)</td>
<td>Berkley Select, Chicago, IL</td>
</tr>
<tr>
<td>Matthew J Kulczak</td>
<td>*** BS Economics, *** BA Mathematics, Risk Management and Insurance (Certificate) and *** BS Statistics</td>
<td>AON, Chicago, IL</td>
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<tr>
<td>Chih Yen (Tina) Liu</td>
<td>(H) * BS Actuarial Science, Computer Science (Minor), (H) * BA Mathematics and (H) BSE Electrical Engineering</td>
<td>Pacific Life, Newport Beach, CA</td>
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<tr>
<td>Jordan A Nolz</td>
<td>BA Mathematics and BS Statistics</td>
<td>Transamerica, Cedar Rapids, IA</td>
</tr>
<tr>
<td>Nicholas Lee Odegaard</td>
<td>* BS Actuarial Science, Risk Management and Insurance (Certificate) and * BS Statistics</td>
<td>Global Atlantic Financial Group, Des Moines, IA</td>
</tr>
<tr>
<td>Nathan Lee Promes</td>
<td>BS Actuarial Science, Mathematics (Minor) and BS Statistics</td>
<td>Athene, West Des Moines, IA</td>
</tr>
<tr>
<td>Mitchell Bruce Tamashunas</td>
<td>Mathematics (Minor), Risk Management and Insurance (Certificate) and BS Statistics</td>
<td>Prudential, New York, NY</td>
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<tr>
<td>Samuel M Werner</td>
<td>(H) *** BS Actuarial Science, (H) *** BA Mathematics, Risk Management and Insurance (Certificate) and (H) *** BS Statistics</td>
<td>Cigna, Denver, CO</td>
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<tr>
<td>Minyuan Xu</td>
<td>BS Actuarial Science and BS Statistics</td>
<td>Graduate study at George Washington U</td>
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<tr>
<td>Dongfang Zhao</td>
<td>BS Actuarial Science, BA Mathematics and BS Statistics</td>
<td>Graduate study at Western U, Canada</td>
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<tr>
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<td>Ashton Cracraft</td>
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<td>Reinsurance Group of America</td>
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<td>Matthew Kulczak</td>
<td>Allianz</td>
<td>Munich, Germany</td>
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<td>Tina Liu</td>
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<tr>
<td>Ivan Morales</td>
<td>Country Financial</td>
<td>Bloomington, IL</td>
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<td>Mason Newhard</td>
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<td>Iowa City</td>
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<td>Global Atlantic Financial Group</td>
<td>Des Moines</td>
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<td>Athene</td>
<td>Des Moines</td>
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<tr>
<td>Rachel Rinehart</td>
<td>Athene</td>
<td>Des Moines</td>
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<tr>
<td>Mitch Tamashunas</td>
<td>Prudential Financial</td>
<td>Newark, NJ</td>
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<tr>
<td>Simeon Taylor</td>
<td>Southern Farm Bureau Life Insurance Company</td>
<td>Jackson, Mississippi</td>
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<tr>
<td>Sam Werner</td>
<td>Cigna</td>
<td>Denver, CO</td>
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</table>
Scholarships & Awards

The prestigious scholarship that many of our undergraduate students receive is called the Charles E. and Eleanore G. Wilson Scholarship.

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 $300,000 has been awarded to 36 deserving students based upon academic merit for 2020-21. This includes 9 promising 1st year students and 27 upper-class students.

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. Additionally 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.