

**MATH 3630**  
**Long-Term Actuarial Mathematics I**  
**MW 3:35-5:25 PM OAK 117 Section 001**  
**Fall 2019 Semester**

**Instructor**

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**Office hours**

Mondays, 10am - 1pm or by appointment (send email)

**Prerequisites**

Math 3160 (Probability) or Stat 3375 (Mathematical Statistics I); and Math 2620 (Financial Mathematics I)

**Course website**

<http://www.huskyct.uconn.edu/>  
<http://www.math.uconn.edu/~valdez/math3630f19/>

Additional details about the course including several links related to the SOA Exam LTAM will be found in our course website.

**Required readings**

Lectures and exercises in the class will be heavily based on the materials covered from the following textbook:

*Actuarial Mathematics for Life Contingent Risks*, 2nd edition, by D. Dickson, M. Hardy, and H. Waters, Cambridge University Press, 2013.

Solutions manual to the 2nd edition can also be ordered here: [amazon.com](http://amazon.com). In addition, the Cambridge University Press site may provide additional resources here: [Cambridge University Press](http://Cambridge University Press). Any possible errata on the book can usually be found here too.

*LTAM-21-18 Long Term Actuarial Mathematics Study Note*, by M. Hardy, available at the [Society of Actuaries LTAM](http://Society of Actuaries LTAM).

Details of a tentative class lecture program are attached as appendix.

**Additional suggested reference**

The following textbook may also be helpful for those preparing for Exam MLC:

*Models for Quantifying Risk*, 6th edition, by S. Camilli, I. Duncan, and R. London, Actex Publications, 2014. <https://www.actexamdriver.com/product.aspx>

## Course assessments

The following table gives the relative weights of the assessment components for the course:

Assessment	Weights	Dates
Class Test 1	25%	September 18
Class Test 2	35%	November 18
Final Examination	40%	to be announced
Total	100%	

Your final grade is determined as follows (may be adjusted if necessary):

Grade	A	A-	B+	B	B-	C+
Points	[90, 100)	[87, 90)	[84, 87)	[81, 84)	[78, 81)	[75, 78)
Grade	C	C-	D+	D	D-	F
Points	[70, 75)	[65, 70)	[60, 65)	[55, 60)	[50, 55)	[0, 50)

## Final examination

Final examination week for Fall 2019 semester takes place from Monday, December 9, through Sunday, December 15. Students are required to be available for their exam during the stated time. If you have a conflict with this time, you must visit the Dean of Students Office to discuss the possibility of rescheduling this exam.

Please note that vacations, previously purchased tickets or reservations, social events, misreading the exam schedule and over-sleeping are not viable excuses for missing a final exam. If you think that your situation warrants permission to reschedule, please contact the Dean of Students Office with any questions. Thank you in advance for your cooperation.

## Policy Against Discrimination, Harassment and Related Interpersonal Violence

The University is committed to maintaining an environment free of discrimination or discriminatory harassment directed toward any person or group within its community – students, employees, or visitors. Academic and professional excellence can flourish only when each member of our community is assured an atmosphere of mutual respect. All members of the University community are responsible for the maintenance of an academic and work environment in which people are free to learn and work without fear of discrimination or discriminatory harassment. In addition, inappropriate amorous relationships can undermine the University’s mission when those in positions of authority abuse or appear to abuse their authority. To that end, and in accordance with federal and state law, the University prohibits discrimination and discriminatory harassment, as well as inappropriate amorous relationships, and such behavior will be met with appropriate disciplinary action, up to and including dismissal from the University. Additionally, to protect the campus community, all non-confidential University employees (including faculty) are required to report sexual assaults, intimate partner violence, and/or stalking involving a student that they witness or are told about to the Office of Institutional Equity. The University takes all reports with the utmost seriousness. Please be aware that while the information you provide will remain private, it will not be confidential and will be shared with University officials who can help.

More information is available at [equity.uconn.edu](http://equity.uconn.edu) and [titleix.uconn.edu](http://titleix.uconn.edu).

### **Sexual Assault Reporting Policy**

To protect the campus community, all non-confidential University employees (including faculty) are required to report assaults they witness or are told about to the Office of Diversity and Equity under the Sexual Assault Response Policy. The University takes all reports with the utmost seriousness. Please be aware that while the information you provide will remain private, it will not be confidential and will be shared with University officials who can help.

More information is available at [sexualviolence.uconn.edu](http://sexualviolence.uconn.edu).

### **Statement on Absences from Class Due to Religious Observances and Extra-Curricular Activities**

Faculty and instructors are strongly encouraged to make reasonable accommodations in response to student requests to complete work missed by absence resulting from religious observances or participation in extra-curricular activities that enrich their experience, support their scholarly development, and benefit the university community. Examples include participation in scholarly presentations, performing arts, and intercollegiate sports, when the participation is at the request of, or coordinated by, a University official. Such accommodations should be made in ways that do not dilute or preclude the requirements or learning outcomes for the course. Students anticipating such a conflict should inform their instructor in writing within the first three weeks of the semester, and prior to the anticipated absence, and should take the initiative to work out with the instructor a schedule for making up missed work. For conflicts with final examinations, students should contact the Office of the Dean of Students.

Faculty and instructors are also encouraged to respond when the Counseling Program for Intercollegiate Athletes (CPIA) requests student progress reports. This will enable the counselors to give our students appropriate advice.

### **Academic integrity**

A fundamental tenet of all educational institutions is academic honesty; academic work depends upon respect for and acknowledgement of the research and ideas of others. Misrepresenting someone else's work as one's own is a serious offense in any academic setting and it will not be condoned.

Academic misconduct includes, but is not limited to, providing or receiving assistance in a manner not authorized by the instructor in the creation of work to be submitted for academic evaluation (e.g. papers, projects, and examinations); any attempt to influence improperly (e.g. bribery, threats) any member of the faculty, staff, or administration of the University in any matter pertaining to academics or research; presenting, as one's own, the ideas or words of another for academic evaluation; doing unauthorized academic work for which another person will receive credit or be evaluated; and presenting the same or substantially the same papers or projects in two or more courses without the explicit permission of the instructors involved.

A student who knowingly assists another student in committing an act of academic misconduct shall be equally accountable for the violation, and shall be subject to the sanctions and other remedies described in *The Student Code*.

## Code of Conduct for candidates

This course prepares students for a professional examination administered by the Society of Actuaries (SOA) for which credit is also awarded by the Casualty Actuarial Society (CAS). Actuarial Candidates, as defined by these organizations, must adhere to the Code of Conduct for Candidates (SOA) and Code of Professional Ethics for Candidates (CAS). A copy of each is attached at the end of this syllabus and is a part of this syllabus.

## Tentative class schedule <sup>1</sup>

Chapter 1 on “Introduction to Life Insurance” is a highly recommended background reading.

Week Number	Week Beginning	Topics Covered	Assessment
1	Aug 26	Course introduction	
2	Sep 2	Survival models (2 weeks) Dickson, et al. (Chapter 2)	
3	Sep 9	- continued	
4	Sep 16	Life tables and selection (2 weeks) Dickson, et al. (Chapter 3)	Class Test 1 (details to be announced)
5	Sep 23	- continued	
6	Sep 30	Insurance benefits (2 weeks) Dickson, et al. (Chapter 4)	
7	Oct 7	- continued	
8	Oct 14	Annuities (2 weeks) Dickson, et al. (Chapter 5)	
9	Oct 21	- continued	
10	Oct 28	Premium calculation (2 weeks) Dickson, et al. (Chapter 6)	
11	Nov 4	- continued	
12	Nov 11	Policy values (2 weeks) Dickson, et al. (Chapter 7)	
13	Nov 18	- continued	Class Test 2 (details to be announced)
Thanksgiving Recess: Nov 24-30			
14	Dec 2	Mortality improvement modelling LTAM-21-18 (Section 4) Final exam review	
Final Examination Period: Dec 9-15			

<sup>1</sup>any changes will be announced in class or on website



## Code of Conduct for Candidates

Effective December 1, 2008, revised November 1, 2015

The purpose of the Society of Actuaries (SOA) *Code of Conduct for Candidates* ("Candidate Code") is to require Actuarial Candidates to adhere to the high standards of conduct, practice, and qualifications of the actuarial profession, thereby supporting the actuarial profession in fulfilling its responsibility to the public. An Actuarial Candidate must comply with both the letter and spirit of the Candidate Code. An Actuarial Candidate who commits a material violation of the provisions of the Candidate Code shall be subject to the discipline procedures of the SOA.

An "Actuarial Candidate" is a person who has contacted the SOA with an intent to register for, has registered for, or completed any SOA educational or evaluative activity (e.g., exams, modules, exercises, assessments, validations or courses), but is not a member of the SOA as an Associate (ASA), Chartered Enterprise Risk Analyst (CERA) or Fellow (FSA).

In situations where an Actuarial Candidate performs actuarial work, the candidate's client or employer is defined as the "Principal." "Actuarial Services" are professional services provided to a Principal by an individual acting in the capacity of an actuary. Such services include the rendering of advice, recommendations, findings, or opinions based upon actuarial considerations.

- RULE 1:** An Actuarial Candidate shall act honestly, with courtesy, integrity, and competence, to uphold the reputation of the actuarial profession.
- RULE 2:** An Actuarial Candidate shall not engage in any professional conduct involving dishonesty, fraud, deceit, or misrepresentation or commit any act that reflects adversely on the actuarial profession.
- RULE 3:** An Actuarial Candidate shall act with courtesy and professional respect in all interactions with the SOA.
- RULE 4:** An Actuarial Candidate shall perform Actuarial Services with courtesy and professional respect and shall cooperate with others in the Principal's interest.
- RULE 5:** An Actuarial Candidate shall strictly comply with the letter and spirit of the SOA Rules and Regulations for Examinations and Terms and Conditions Agreement for e-Learning Candidates.
- RULE 6:** Actuarial Candidates are not authorized to use, and therefore must never use membership designations of the SOA until they are admitted to membership by the SOA Board of Directors.
- RULE 7:** An Actuarial Candidate shall not disclose to another party any confidential information unless authorized to do so by the Principal or required to do so by law, statute, or regulation. Confidential information includes information of a proprietary nature and information that is legally restricted from circulation.
- RULE 8:** An Actuarial Candidate shall respond promptly, truthfully, and fully to any request for information by, and cooperate fully with, the appropriate disciplinary body of the SOA in connection with any disciplinary or other proceeding relating to the Candidate Code. The Actuarial Candidate's responsibility to respond shall be subject to applicable restrictions listed in Rule 7 and those imposed by law, statute, or regulation.

# Casualty Actuarial Society

## Code of Professional Ethics for Candidates

(As Introduced January 1, 2008)

The purpose of the Casualty Actuarial Society (CAS) Code of Professional Ethics for Candidates (Candidate Code) is to require actuarial candidates to adhere to the high standards of conduct, practice, and qualifications of the actuarial profession, thereby supporting the actuarial profession in fulfilling its responsibility to the public. An actuarial candidate shall comply with the Candidate Code. An actuarial candidate who commits a material violation of the provisions of the Candidate Code shall be subject to the counseling and discipline procedures of the CAS.

“Actuarial candidates” are those persons who have registered for a CAS specific exam but have yet to fulfill all of the requirements for admission into the CAS. In situations where actuarial candidates perform actuarial work, their “principal” is defined as their client or employer. “Actuarial services” are professional services provided to a principal by an individual acting in the capacity of an actuary. Such services include the rendering of advice, recommendations, findings, or opinions based upon actuarial considerations.

Rule 1: An actuarial candidate shall act honestly, with integrity and competence, to uphold the reputation of the actuarial profession.

Rule 2: An actuarial candidate shall not engage in any professional conduct involving dishonesty, fraud, deceit, or misrepresentation or commit any act that reflects adversely on the actuarial profession.

Rule 3: An actuarial candidate shall perform actuarial services with courtesy and professional respect and shall cooperate with others in the principal’s interest.

Rule 4: An actuarial candidate shall adhere to the CAS Policy on Examination Discipline.

Rule 5: Actuarial candidates are not authorized to use membership designations of the CAS until they are admitted to membership by the CAS Executive Council.

Rule 6: An actuarial candidate shall not disclose to another party any confidential information unless authorized to do so by the principal or required to do so by law, statute, or regulation. Confidential information includes information of a proprietary nature and information that is legally restricted from circulation.

Rule 7: An actuarial candidate shall respond promptly, truthfully, and fully to any request for information by, and cooperate fully with, appropriate counseling and disciplinary body of the CAS in connection with any disciplinary, counseling or other proceeding of such body relating to the Candidate Code. The actuarial candidate’s responsibility to respond shall be subject to applicable restrictions listed in Rule 6 and those imposed by law, statute, or regulation.

(The CAS Board of Directors approved the code above on November 12, 2006, effective with the Spring 2008 exam sitting.)

A copy of the Casualty Actuarial Society Rules of Procedure for Disciplinary Actions Involving Candidates is available in the Exams & Admissions section of the CAS website under “Candidate's Code of Ethics.”