Actuarial Science Program
DEPARTMENT OF MATHEMATICS
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

Advising Notes for Graduate Actuarial Science Students – Academic Year 2020-2021

(1) Graduate degree requirements:

- ***32 total credit hours*** (in general, grad courses are 4 credit hours each, so essentially 8 courses are required), chosen in accordance with the student's background and interests.
- At least ***20*** of the 32 hours must be ***in Actuarial Science*** (5 courses should come from ASRM).
- All courses applying to the degree must be either ***400- or 500-level***. However, ASRM 401 cannot be counted toward the actuarial science Master's degree. These courses should have a significant relation to Actuarial Science and are subject to approval by the advisor or the Director of Actuarial Science.
- At least ***12*** of the 32 hours must be ***in approved 500-level courses.*** FIN 521 cannot be counted toward this requirement, but counts towards the 32 total credit hours requirement.
- At least ***8*** of the 12 500-level hours must be selected from ***ASRM 510, 552, 561, 569, 575, MATH 563 or an approved section of ASRM 595.***
- Students are required to register for ***ASRM 598 (Actuarial Science Seminar)*** for two semesters and are expected to attend at least each semester 80% of all seminars, and more than 4 seminars. All seminars hosted by the Actuarial Science Program count towards this requirement.

(2) Program length:

- From ***two to four semesters***, depending upon preparation, working or assistantships, etc.

(3) Link between UIUC courses and professional actuarial exams:

Although not part of formal degree requirements, graduate students who are planning to undertake an actuarial career are strongly recommended to prepare for actuarial professional exams. We offer the following courses covering at least 80% of the syllabus for SOA/CAS exams.

Exam 1/P:	ASRM 401	- Actuarial Statistics I
Exam 2/FM:	ASRM 210	- Theory of Interest
Exam LTAM:	ASRM 575	- Life Insurance and Pension Mathematics *
Exam 3F/IFM:	ASRM 410	- Investment and Financial Markets
	ASRM 510	- Financial Mathematics *
Exam MAS-II/STAM:	ASRM 561	- Loss Data Analytics and Credibility
Exam 5:	ASRM 569	- Extreme Value Theory and Catastrophe Modeling
Exam MAS-II/SRM:	ASRM 450	- Methods of Applied Statistics
	ASRM 451	- Basics of Statistical Learning (undergrad level)
	ASRM 551	- Statistical Learning (grad level)
Exam PA:	ASRM 552	- Predictive Analytics
Exam MAS-I:	ASRM 402	- Actuarial Statistics II
	ASRM 409	- Stochastic Processes for Finance and Insurance
	ASRM 450	- Methods of Applied Statistics
Exam MAS-II:	ASRM 453	- Applied Bayesian Analysis

* ASRM 575: prepares also for the Individual Life and Annuities Track (FSA)
ASRM 510: prepares for the Quantitative Finance and Investment Track (FSA)

We offer multiple sections of ASRM 392 Actuarial Problem Solving as exam prep sessions. They are typically offered once per week in the evenings. Please note that these courses do not count towards the graduation requirement.

ASRM 392 Section #	SOA/CAS Exams	Available (Recently)
P	Exam 1/P	F, S
FM	Exam 2/FM	F, S
LTAM	Exam LTAM	S
IFM	Exam 3F/IFM	F

(4) Typical offering frequency for core actuarial courses:

Course #	Course Title	Available (Recently)
ASRM 402	Actuarial Statistics II*	F
ASRM 409	Stochastic Processes	S
ASRM 410	Investment and Financial Markets	S
ASRM 450	Methods of Applied Statistics (Section GR)	F, S
ASRM 551	Statistical Learning**	F, S
ASRM 510	Financial Mathematics	F
ASRM 561	Loss Data Analytics and Credibility	F (2019 only), S
Math 563	Risk Modeling and Analysis	F
ASRM 569	Extreme Value Theory and Cat. Modeling	F
ASRM 575	Life Insurance and Pension Math.	F (2020)
ASRM 552	Predictive Analytics (PA)	S
ASRM 533	Risk Management Practices and Regulation (RM)	F
STAT 430	Topics in Applied Statistics	F, S

* This course earns credits from the Society of Actuaries for Validation through education experience (VEE) Statistics.

Note: ASRM 561, 569 and often 595 are cross-taught with undergraduate courses. Graduate students must register for the 500-level course. The graduate course will include additional material and/or assignments at a graduate level.

** There are only limited seats offered on a first-come-first-serve basis for ASRM 551 and STAT 430. Students should contact Alfred Chong (wfchong@illinois.edu) in order to register for these courses.
Students intended to take ASRM 551 should have taken ASRM 450 (Methods of Applied Statistics) or its equivalent in other universities.

(5) Thesis Option:

A ***thesis*** option is available for students intended to pursue a ***doctoral program*** at the University of Illinois. Students wishing to pursue this option should register for 4 credit hours of ASRM 599 for one semester, typically in their second or third semester.

The thesis is typically written on a research project offered by the *Illinois Risk Lab*. The student should find a thesis adviser and admission to the thesis option is decided by the Director of Actuarial Science, who will be responsible for the suitability of the material chosen and the approval of the thesis. Completion of a thesis option does not guarantee admission into the doctoral program in actuarial science and risk analytics. However, favorable consideration will be given to students with high quality research work.

(6) Other possible courses of interest:

- Accy: 200***
- Fin: 431, 432, 434 571, 572, 521***
- Econ: 102****, 103****
- Stat: 425, 426, 427, 428, 429, 430, 440, 448

*** These two courses together earn credits from the SOA/CAS VEE Accounting and Finance.

**** These two courses together earn credits from the SOA/CAS VEE Economics.

(7) Sample schedules:

	1st year Fall	*1st year Spring*	*2nd year Fall*	*2nd year Spring*
Two Semesters	ASRM 402 ASRM 471/575 ASRM 510 ASRM 450	ASRM 410 ASRM 561 ASRM 552 ASRM 551		
Three Semesters	ASRM 402 ASRM 471/575 ASRM 569	ASRM 409 ASRM 561 ASRM 552	ASRM 510 Math 563 ASRM 533	
Four Semesters	ASRM 402 ASRM 471/575 ASRM 569	ASRM 409 ASRM 561 ASRM 552	ASRM 510 Math 563 ASRM 533	ASRM 453 ASRM 551

Note: If the material in some of the above courses is already familiar to the student, or if the student has a particular or specialized area of study in mind, the above courses can be changed to more appropriate offering (ASRM 402 may not be needed, e.g.).

(8) Note for international students.

Depending on your visa status, if you obtain an internship during your studies, you must register for ASRM 398, Actuarial Internship. There may also be limits on the number of online courses you can count towards a full course of study.

International students on F-1 visa should maintain a full-time student status, which is defined as 12 credit hours every semester. If you wish to enroll for a reduced course load, you must seek the approval from the International Student and Scholar Services (ISSS) by filling out the appropriate form on the ISSS website. Please see ISSS website for more information: (http://isss.illinois.edu/students).