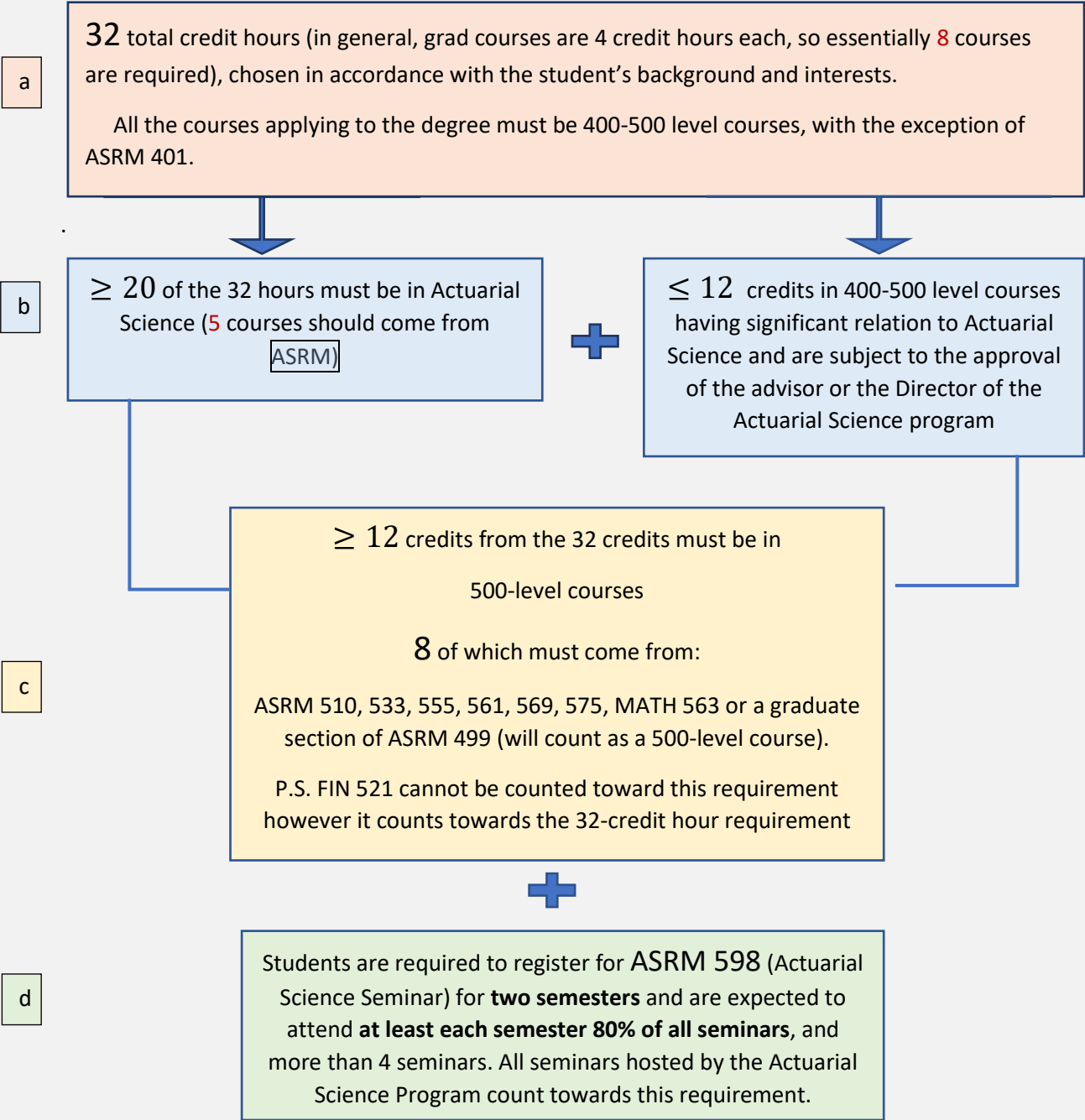


**Actuarial Science Program**  
**DEPARTMENT OF MATHEMATICS**  
**UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN**  
**Advising Notes for Master of Science - Actuarial Science Students**  
**Academic Year 2022-2023**

**(1) Graduate degree requirements:**



**(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	Course Number	Course Name	Comments
Exam 1/P	ASRM 401	Actuarial Statistics I	Does not count towards Masters
Exam 2/FM	ASRM 210	Theory of Interest	Does not count towards Masters
Exam ALTAM	ASRM 575	Life Insurance and Pension Mathematics	Prepares also for the Individual Life and Annuities Track (FSA)
Exam 3F	ASRM 410	Investment and Financial Markets	Note: Credit can now be given to both ASRM 410 and ASRM 510 * ASRM 510: prepares student for the Quantitative Finance and Investment Track (FSA)
	ASRM 510	Financial Mathematics *	
Exam MAS-II/ASTAM	ASRM 469	Casualty Actuarial Mathematics	
CAS Exam 5	ASRM 569	Extreme Value Theory and Catastrophe Modeling	
Exam MAS-II/SRM	ASRM 450	Methods of Applied Statistics	
	ASRM 499 SRM	Statistics for Risk Modeling	(Grad level-section with a "G")
Exam PA	ASRM 455	Predictive Analytics	
	ASRM 555	Advanced 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	

In addition, 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 requirements.

Course	Section	SOA/CAS Exam	Available (Recently)
ASRM 392	P	1/P	Fall and Spring

#### (4) Typical offering frequency for core actuarial courses

Course Number	Course Name	Availability Recently	
		Fall	Spring
ASRM 402	Actuarial Statistics II*	✓	
ASRM 409	Stochastic Processes		✓
ASRM 410	Investment and Financial Markets	✓	✓
ASRM 450	Methods of Applied Statistics (Section GR)	✓	✓
ASRM 451	Basics of Statistical Learning	✓	✓
ASRM 453	Applied Bayesian Analysis	✓	✓
ASRM 455	Predictive Analytics	✓	
ASRM 471	Life Contingencies I	✓	
ASRM 472	Life Contingencies II		✓
ASRM 499	Statistics for Risk Modeling		✓
ASRM 499	Generalized Linear Models	✓	
ASRM 499	Blockchain Technology and Decentralized Finance	✓	
ASRM 499	Deep Learning for Finance and Insurance	✓	
ASRM 551	Statistical Learning**	✓	✓
ASRM 510	Financial Mathematics	✓	
ASRM 561	Loss Data Analytics and Credibility***	✓	✓
Math 563	Risk Modeling and Analysis	✓	
ASRM 569	Extreme Value Theory and Cat. Modeling***	✓	
ASRM 575	Life Insurance and Pension Math****	✓	
ASRM 555	Advanced Predictive Analytics (PA)		✓
ASRM 533	Risk Management Practices and Regulation (RM)	✓	
STAT 430	Topics in Applied Statistics	✓	✓

\* This course earns credits from the SOA for Validation through education experience (VEE) Statistics.

\*\* There are only limited seats offered on a first-come-first-serve basis for ASRM 551 and STAT 430. Students should contact ASRM-advising@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.

\*\*\* 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.

\*\*\*\*ASRM 561 and ASRM 575 are typically only offered in the Fall. A Spring offering may be available in consideration of resources.

## **(5) University-Earned Credit (UEC) Program**

The University-Earned Credit (UEC) program allows university students to earn credit for SOA exams by attaining a required score on university coursework at Centers of Actuarial Excellence (CAE). A comprehensive evaluation process ensures that UEC courses and exams meet the high standards for the program. A student earning the course credit through a UEC approved course would then be exempt from completing the corresponding SOA exam

As a CAE program, the actuarial science program at UIUC has applied for approval for all available courses that may be eligible for UEC credit.

The Course mappings from the SOA to ASRM courses at UIUC are summarized as follows:

<b>SOA Exam</b>	<b>UIUC ASRM Course</b>
FM	ASRM 210
SRM	ASRM 499 – Section GRL
FAM-L*	ASRM 471
FAM-S*	ASRM 461
ALTAM	ASRM 472
ASTAM	ASRM 469

\* FAM-L and FAM-S will be offered 6 times - October 2022, March 2023, July 2023, November 2023, March 2024, and July 2024.

For students who are planning to complete the SOA examination requirements, we suggest that you consult with the course calendar with respect to when UEC accredited courses are offered in order to assist with ASRM course planning. We strongly encourage you to schedule a meeting with an advisor through the Actuarial Science Office to assist with this decision.

## **(6) 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 and upon approval, they should register for 4 credit hours of ASRM 599 for one semester during their second or third semester. The thesis is written on a research project offered by the Illinois Risk Lab. The student should find a thesis adviser and apply for the thesis option electronically through the following link: <https://forms.illinois.edu/sec/1944364570>. 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.

## **(7) Other possible courses of interest**

- Accy: 200\*\*\* (do not count towards master's credit)
- Fin: 431, 432, 434 571, 572, 521\*\*\*

- Econ: 102\*\*\*\*, 103\*\*\*\* (do not count towards master's credit)
- Stat: 425, 426, 427, 428, 429, 430, 440, 448

**(8) Sample schedules**

	First Year		Second Year	
	Fall	Spring	Fall	Spring
Two Semesters	ASRM 402	ASRM 410		
	ASRM 471/ 575	ASRM 450		
	ASRM 561	ASRM 555		
	ASRM 455	ASRM 551		
Three Semesters	ASRM 402	ASRM 450	ASRM 510	
	ASRM 471/ 575	ASRM 410	ASRM 533	
	ASRM 499	ASRM 551		
Four Semesters	ASRM 402	ASRM 409	ASRM 510	ASRM 453
	ASRM 471/ 575	ASRM 450	MAT 563	ASRM 551
	ASRM 499	ASRM 410	ASRM 533	

**(9) Note for international students**

Dependent 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://iss.illinois.edu/students>)