Actuarial Science--Predictive Analytics Option

2020-2021 calendar

	Course	Year/ Term	Торіс	Pre-reqs	Offering	SOA exams	CAS exams	Comments
1	CS 115 or CS 135 or CS 145 *	1A	CS Core I		FWS			* a few other options - see first yea advisor if you have issues
2	MATH 135/145	1A	Algebra		FWS			
3	MATH 137/147	1A	Calculus I		FWS			
ł	Math English course	1A	Course from English Language Competency requirements list		FWS			
5	MTHEL 131	1	Intro to Actuarial Practice		FWS			≥60% Requried for admission to ACTSC
	CS 116 or CS 136 or							* a few other options - see first yea advisor if you have issues
5	CS 146 *	1B	CS Core II	CS Core I	FWS			advisor ir you nave issues
3	MATH 136/146 MATH 138/148	1B 1B	Linear Algebra 1 Calculus II	≥60% in M135	FWS FWS			
))	ECON 101	1	Intro microeconomics	≥60% in M137	FWS	VEE-E	VEE-E	
, 0		1/2	Intro macroeconomics		FWS	VEE-E	VEE-E	
1	AFM 101	1	Introduction to Financial Accounting		FWS	VEE-AF	VEE-AF	
2	MATH 235/245	2A	Linear Algebra 2	≥60% in M136, Coreq M138	FWS			
3	MATH 237/247	2A	Calculus 3	≥60% in M136,≥60% in M138	FWS			
4	STAT 230/240	2A	Probability	M. 137 >80% or M138	FWS	Р	Р	
5		2A	Introductory Financial Mathematics	M137, level 2A, Coreq S230	FWS	FM	FM	
6		2	Intro to diff equations	M138	FWS			
7	STAT 231/241	2B	Statistics	M138,S230	FWS			
8	ACTSC 232	2B	Life Contingencies 1	≥60% in A232, >60% in MTHEL 131, S.230	FWS	LTAM		
9	ACTSC 371	2/3	Introduction to Investments	Coreq S231	FWS	IFM	IFM	
0	ACTSC 363	ЗA	Casualty and Health Insurance Mathematics 1	Coreq S330	FW (S-?)	STAM		First offering is Winter 2021
1	ACTSC 331	3A	Life Contingencies 2	≥60% in AS232	FWS	LTAM		
2		3	Mathematical Statistics	M237, ≥60% in S230,S231	FWS	VEE-MS		
3		3	Applied linear models	M235, ≥60% in S231	FWS	SRM, PA	MAS-I	
4	STAT 333	3	Applied probability	≥60% in S230, level 3A (AS331 or S331),≥70% in EMLS	FWS		MAS-I	
5	ENGL 378/MTHEL 300	3B/4	Professional Communications in Statistics and Actuarial Science	101R, 102R, EMLS/ENGL 129R, ENGL 109, SPCOM 100, 223	FWS	PA		
6	CS 330	3/4	Management Informaiton Systems	CS Core II, M136,M237,S231	FW			
7	STAT 341	3/4	Computational Statistics and Data Analysis	≥60% in S230,M237, S231	FW			STAT 340 is NOT accepted
8		4	Casualty and Health Insurance Mathematics 2	≥60% in A363, S330	FS	STAM		First offering is Spring 2021
				(AS231,371), (S333 or 334)			1514	5.5
9		4	Mathematics of Financial Markets		FW	IFM	IFM	
0		4	Generalized linear models	\$330,(\$331 or \$371)	FWS	SRM	MAS-I	
1		4	Statistical Learning - Classificaiton	S341 or (S330+340)	FW	PA	MAS-II	-
2	STAT 443	3/4	Forecasting	S331	FWS		MAS-I	
3	One of							
	ACTSC 454	4	Longevity and Mortality using Predictive Analytics	AS331,S330	W	LTAM		Formerly ACTSC 433
	STAT 437	4	Statistical Methods for Life History Analysis	S431	w			
4	One of							
	STAT 440	4	Computational Inference	S341	WS			
	STAT 442	4	Date Visualization	S231	FW			
	2 Additional 400 level	ACTSC	courses If ACTSC 454 is used above as #33, th	nen only 1 Additional:				
	ACTSC 432	4	Property & Casualty Insurance: Pricing	A363, S330, S331/371	FS	STAM	MAS-II	
				(AS231,371), (S330 and 333 or 334)				
	ACTSC 445	4	Quantitative Enterprise Risk Management		FS			
	ACTSC 453	4	Basic Pensions Mathematics	AS331	W (odd years)			
		4	Life Continuencies 2	≥60% in AS331, co-reg A446	w	1.74.14		
	ACTSC 455 ACTSC 463	4	Life Contingencies 3 Intro to Property & Casualty Loss Reserving	A363, S331/371	W (not certain)	LTAM STAM	Exam 5	
						21		
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-	If ACTSC 454 is used as course #33, then 5 additional course is required to meet the 40 courses.							
	Students who want a double major with Statistics must have STAT 332 and a total of 3 STAT 4XX courses							
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	Total 40 course	es						

SOA and CAS exam mappings are intended to be a guideline for students.

Aug-20

The entire CAS MAS-II syllabus cannot be directly mapped to the program's courses. In addition to the courses indicated above, students preparing for this exam may also consider taking STAT 430, STAT 442 and STAT 440.

For CIA Accreditation information: https://uwaterloo.ca/statistics-and-actuarial-science/current-undergraduate-students/canadian-institute-actuaries-cia-accreditation Occassionally mistakes are found on these sheets. Make sure you have the most up to date version, and know that a mistake on this sheet, will not allow you to graduate missing a required course. The undergraduate calendar is the official list of required courses for any program and these sheets are created to help things be easier for you.