

# Actuarial Science Honours Plan

2015-2016 Calendar

	Course	Year/ Term	Topic	Pre-reqs	Offering	SoA/CAS exams	Start Date as of September 2014	Comments
1	CS 115 or CS 135 or CS 145 *	1A	CS Core I		FWS			* a few other options - see first year advisor if you have issues
2	MATH 135/145	1A	Algebra		FWS			
3	MATH 137/147	1A	Calculus I		FWS			
4	Math English course	1A	Course from English Language Competency requirements list		FWS			** See note below if started in Fall 2014 or earlier
5	MTHEL 131	1	Intro to Actuarial Practice		FWS			Required for admission to ACTSC
6	CS 116 or CS 136 or CS 146 *	1B	CS Core II	CS Core I	FWS			* a few other options - see first year advisor if you have issues
7	MATH 136/146	1B	Linear Algebra 1	M135	FWS			
8	MATH 138/148	1B	Calculus II	M137	FWS			
9	ECON 101	1	Intro microeconomics		FWS	VEE-E		
10	ECON 102	1/2	Intro macroeconomics		FWS	VEE-E		
11	AFM 101	1	Core Concepts of accounting information		FWS			
12	MATH 235/245	2A	Linear Algebra 2	M136	FWS			
13	MATH 237/247	2A	Calculus 3	M136,138	FWS			
14	STAT 230/240	2A	Probability	M137	FWS	P		
15	ACTSC 231	2A	Introductory Financial Mathematics	M137, level 2A, Coreq S230	FWS	FM	FM - 80%	
	ONE OF:							
	a) MATH 239	2B	Intro combinatorics	M136,138	FWS			
	b) AMATH 231		Calculus 4	M237	FW			
16	c) AMATH 250		Intro to diff equations	M138	FWS			
17	STAT 231/241	2B	Statistics	M138,S230	FWS			
18	ACTSC 232	2B	Life Contingencies 1	>60% in A232, >60% in MTHEL 131**, S.230	FWS	MLC	MLC - 75%	** See note below if started in Fall 2014 or earlier
19	ACTSC 371	2/3	Introduction to Investments	Coreq S231	FWS	FM	FM - 80%	
20	ACTSC 331	3	Life Contingencies 2	≥60% in AS232	FWS	MLC	MLC - 75%, 3L - 75%	
21	STAT 330	3	Stat theory and methods	M237, ≥60% in S230,S231	FWS			
22	STAT 331	3	Applied linear models	M235, ≥60% in S231	FWS	VEE-AS		
23	STAT 333	3	Applied probability	≥60% in S230, level 3A	FWS			
24	ENGL 378/MTHEL 300	3B/4	Professional Communications in Statistics and Actuarial Science	(A331 or S331), >70% in EMLS 101R, 102R, EMLS/ENGL 129R, ENGL 109, SPCOM 100, 223	FWS			First offering will be Fall 2016
25	STAT 340	3/4	Simulation	S231, CS Core II	WS	C		
26	ACTSC 431	4	Loss models 1	S330,S333	FS	* C	C - 75%	* most exam C material from these courses
27	ACTSC 432	4	Loss models 2	S330,S333	FS	* C	C - 75%	* most exam C material from these courses
28	ACTSC 446	4	Mathematics of Financial Markets	(AS231,371), (S333 or 334)	FW	MFE	MFE - 75%	
+ 4 Additional 300-400 level ACTSC courses (or AFM 472 or STAT 431/433 or STAT 443); currently available courses include:								
	ACTSC 372	3	Corporate Finance	AS371, M237	FWS	VEE-CF		
	ACTSC 433	4	Survival analysis	AS331, S330	W	C	C - 75%	
	ACTSC 445	4	Quantitative Enterprise Risk Management	(AS231,371), (S330 and 333 or 334)	FS	FSA(CFE, QRM)		
	ACTSC 453	4	Pensions	AS331	W(odd years)	FAP/FSA(R )		
	ACTSC 455	4	Advanced Life Insurance Practice	≥60% in AS331	W	MLC	MLC - 75%	
	ACTSC 462	4	Intro to Property & Casualty Pricing	(AFM 272 or AS 231)	W	CAS 5 & SOA GI IRR		
	ACTSC 463	4	Intro to Property & Casualty Loss Reserving	(AFM 272 or AS 231), (S331 or 371 or 373)	F	CAS 5 & SOA GI IRR		
	ACTSC 471/AFM 476	4	Advanced corporate finance	AS372	W			
	AFM 472/AFM 424	3/4	Investments	AS372	FW	FSA(F,V)		
	STAT 443	3/4	Forecasting	S331	FWS	VEE-AS		
	STAT 433 or STAT 431	4	Stochastic processes or Generalized linear models	S333 S330,(S331 or S371)	F FWS			
+ 1 Additional 300-400 level mathematics half-unit courses; common choices are								
CO 350, 480, STAT 332, STAT 450, STAT 431 or 433 or ACTSC courses not used to satisfy "+4additional" above								
+ 7 Additional courses, of which AT LEAST 4 must be outside the math faculty (3 if AFM 472 is taken)								
<b>Students who want a double major with Statistics must have STAT 332 and a total of 3 STAT 4XX courses</b>								
<b>Total 40 courses</b>								

\*\* For ACTSC 232, students who started at Waterloo in Fall 2014 and earned >75% in their first attempt at the first communication course, may use that in place of >60% in MTHEL 131 for ACTSC 232. Students who started in Fall 2013 or before, and have an ELPE mark of Good or Excellent may use that in place of >60% in MTHEL 131.