



Department of Actuarial Science

2023 Registration Information

If you registered for the first time before 2019, you should discuss your study plan with the department. Some of the credits under the old programme will no longer be allowed and others will be required for the BSc (Actuarial and Financial Mathematics) degree and you should plan for it.

Please note that while we have checked the information reflected in this document, it is not a replacement for the yearbook. The correct official information is reflected in the yearbook and the yearbook will always apply.



BSc Actuarial and Financial Mathematics – First Year

First year students should register for all the following modules in the first semester as well as the second semester. All modules are compulsory and there are no elective choices in first year. Note that though you are able to, and should, register for all of the first-year modules listed below, in order to take the second semester modules, you will have to meet the prerequisites by passing the required modules during the first semester

First semester		
Code	Name	Credits
EKN 110	Economics 110	10
AIM 111	Academic information management 111	4
LST 110	Language and Study Skills 110	6
FBS 112	Financial management 112	10
IAS 111	Actuarial and Financial mathematics in practice 111	6
UPO 102	Academic orientation 102	0
WST 111	Mathematical statistics 111	16
WTW 114	Calculus 114	16
WTW 152	Mathematical modelling	8
Total credits for compulsory modules		76



Second semester		
Code	Name	Credits
AIM 121	Academic information management 121	4
EKN 120	Economics 120 Required: EKN 110 GS ¹	10
FBS 122	Financial Management 122 Required: FBS 112	10
IAS 121	Actuarial and Financial Mathematics in practice 121 Required: IAS 111, WTW 114 or WTW 153, and WST 111 or WST 153	6
WST 121	Mathematical statistics 121 Required: WST 111	16
WTW 123	Numerical analysis 123 Required: WTW 114	8
WTW 124	Mathematics 124 Required: WTW 114	16
Total credits for compulsory modules		70

¹ GS means that a combined final mark (the average of the semester/year mark and the examination mark) of between 40% and 49% must be obtained.



BSc Actuarial and Financial Mathematics – Second Year

Second year students should register for the modules set out below. Note that all modules are compulsory with the exception of the second semester where you should select either IAS 282 or WTW 221.

If you have not yet passed all your first-year modules, you should prepare an updated study plan. When preparing an updated study plan, you should consider the modules for which you meet the prerequisites as well as the combinations of subjects required to qualify for exemption from the Actuarial Society examinations.

You need to complete IAS 211 and IAS 282 in the same year to be considered for an A211 exemption and WTW 354 and WTW 364 in the same year for an A214 exemption. The other modules do not have any restrictions for exemption purposes.

Do not construct a plan with too many credits in a semester. You should discuss your updated plan with the department if you have any questions or concerns.

First semester		
Code	Name	Credits
IAS 211	Actuarial mathematics 211 Required: IAS 111, IAS 121, WTW114, WTW123, WTW124, WTW 152, WST111 and WST121	12
WST 211	Mathematical statistics 211 Required: WST111, WST121, WTW114 GS and WTW124 GS ²	24
WST 212	Applications in data science 212 Required: WST 111 and WST 121	12
WTW 211	Linear algebra 211 Required: WTW 124	12
WTW 218	Calculus 218 Required: WTW114 and WTW124	12
Total credits for compulsory modules		72

² GS means that a combined final mark (the average of the semester/year mark and the examination mark) of between 40% and 49% must be obtained.



Second semester		
Code	Name	Credits
IAS 221	Actuarial mathematics 221 Required: IAS 211	12
WST 221	Mathematical statistics 221 Required: WST 211	24
WTW 220	Analysis 220 Required: WTW 114, WTW 124, WTW 211 and WTW 218	12
WTW 264	Differential equations 264 Required: WTW 114, WTW 124 and WTW 211	12
Total credits for compulsory modules		60
IAS 282	Financial mathematics 282 Required: IAS 211	12
WTW 221	Linear algebra 221 Required: WTW211 and WTW 218	12
Total credits for elective modules		12



BSc Actuarial and Financial Mathematics – Third Year

Third year students should register for the six core modules set out below and for two elective modules in terms of the following options.

1. Actuarial Science option: IAS 353, IAS 382
2. Financial Mathematics option: WTW 310 and one of the following modules:
WTW 320, WTW 381, WTW 382, WTW 383, WTW 386

If you are planning to do Honours, you should ensure that you take the correct electives to allow you to meet the requirements for the Honours degree(s) that you are considering. The admission requirements for each degree are available in the yearbook. You should contact the relevant department if you have any questions and/or concerns.

If you have not yet passed all your first- and second-year modules, you should prepare an updated study plan. When preparing an updated study plan, you should consider the modules for which you meet the prerequisites as well as the combinations of subjects required to qualify for exemption from the Actuarial Society examinations,

You need to complete IAS 211 and IAS 282 in the same year to be considered for an A211 exemption and WTW 354 and WTW 364 in the same year for an A214 exemption. The other modules do not have any restrictions for exemption purposes.

Do not construct a plan with too many credits in a semester. You should discuss your updated plan with the department if you have any questions or concerns.

First semester core modules		
Code	Name	Credit
WST 311	Multivariate analysis 311 Required: WST 211, WST 221, WTW 211 GS and WTW 218 GS ³	18
WST 312	Stochastic processes 312 Required: WST 211, WST 221, WTW 211 GS and WTW 218 GS	18
WTW 354	Financial engineering 354 Required: WST 211, WTW 211 and WTW 218	18
Total credits for compulsory modules		54

³ GS means that a combined final mark (the average of the semester/year mark and the examination mark) of between 40% and 49% must be obtained.



Second semester core modules		
Code	Name	Credit
WST 321	Time-series analysis 321 Required: WST 211, WST 221, WTW 211 GS and WTW 218 GS	18
WST 322	Actuarial statistics 322 Required: WST 211, WST 221, WTW 211 GS and WTW 218 GS	18
WTW 364	Financial engineering 364 Required: WST 211, WTW 124, WTW 218 and WTW 264	18
Total credits for compulsory modules		54

Elective modules			
Code	Name	Credit	Semester
IAS 353	Contingencies 353 Required: IAS 221 60%, IAS 282, WST 211, WTW 211, WTW 218	18	1
IAS 382	Survival models 382 Required: IAS 221 60%, IAS 282, WST 211, WST 221, WTW 211 and WTW 218	18	2
WTW 310	Analysis 310 Required: WTW 220	18	1
WTW 320	Complex Analysis 320 Required: WTW 218 and WTW 220	18	2
WTW 381	Algebra 381 Required: WTW 114 and WTW 211	18	1
WTW 382	Dynamical systems 382 Required: WTW 218 and WTW 264	18	1
WTW 383	Numerical analysis 383 Required: WTW 114, WTW 123, WTW 124 and WTW 211	18	2
WTW 386	Partial differential equations 386 Required: WTW 248 and WTW 264	18	1
Total credits for elective modules		36	



BSc Extended programme Mathematical Sciences – Second Year

Students who are considering BSc(Actuarial and Financial Mathematics) and who meet the requirements should register for all the following modules.

First semester		
Code	Name	Credits
EKN 110	Economics 110	10
FBS 112	Financial Management 112 Required: At least 6 (70-79%) in Mathematics in the Grade 12 examination or WTW 135 (60%), WTW 143 (60%), WST 133 (60%) and WST 143 (60%)	10
IAS 111	Actuarial and Financial Mathematics in practice 111 Required: At least 6 (70-79%) in Mathematics in the Grade 12 examination or WTW 135 (60%), WTW 143 (60%), WST 133 (60%) and WST 143 (60%)	6
WST 153	Mathematical statistics 153 WST 133, WST143 and WTW 143. Must be taken concurrently with WTW 153	8
WTW 152	Mathematical modelling	8
WTW 153	Calculus 153 Required: WTW 143	8
Total credits for compulsory modules		50

Second semester		
Code	Name	Credits
EKN 120	Economics 120 Required: EKN 110 GS	10
FBS 122	Financial Management 122 Required: FBS 112	10
IAS 121	Actuarial and Financial Mathematics in practice 121 Required: WTW 153, WST 153 and IAS 111	6
WST 121	Mathematical statistics 121 Required: WST 133, WST 143 and WST 153	16
WTW 123	Numerical analysis 123 Required: WTW 114 ⁴	8
WTW 124	Calculus and algebra 124 Required: WTW 114	16

⁴ WTW 135, WTW 143 and WTW 153 gives a credit for WTW 114.



Total credits for compulsory modules	66
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