BSc in Actuarial Science

Syllabuses and Regulations

2024-2025

Faculty of Science

The University of Hong Kong

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SECTION I Objectives and Learning Outcomes

Degree : Bachelor of Science in Actuarial Science

Objectives : The Actuarial Science curriculum aims at providing formal academic and professional training to students who wish to join the actuarial profession. Although actuarial science is a separate discipline with its own area of knowledge, modern actuarial training requires multidisciplinary knowledge such as probability, statistics, economics, investment, finance, law, taxation, and accounting. The Actuarial Science curriculum reflects this by incorporating various interdisciplinary courses into the basic actuarial training. The programme is set up to equip students with solid background in actuarial science, to develop their confidence and analytical skills to define and tackle problems in actuarial science and other related fields. Specifically, the programme is designed to provide adequate knowledge for students to sit for the early professional examinations organized by international actuarial organizations so that they can successfully join the actuarial profession after graduation. In addition, the programme provides enough academic training for students who wish to pursue postgraduate studies in actuarial science or other related areas.

Learning Outcomes of Actuarial Science Programme

By the end of this programme, students should be able to:

- understand and apply various analytic and quantitative methods to define and solve problems in insurance, finance, economics, investment, pension, financial risk management and demography
 (by means of coursework and tutorial classes and/or research-based project in the curriculum)
- understand and identify the nature of insurance, finance and investment risks
 (by means of coursework and tutorial classes and/or research-based project in the curriculum)
- (3) develop analytical skills to evaluate and measure various kinds of risk, and appraise the related moral and ethical issues
 (by means of coursework and tutorial classes and/or research-based project in the curriculum)
- (4) formulate effective business strategies to manage various kinds of risk
 (by means of coursework and tutorial classes and/or research-based project in the curriculum)
- (5) communicate and collaborate with people effectively on issues related to actuarial science (by means of coursework and tutorial classes and/or research-based project in the curriculum)
- discuss current actuarial issues and acquire and apply practical knowledge in some specially designed courses
 (by means of coursework and tutorial classes and/or research-based project in the curriculum)

SECTION II Credit Unit Statement of the BSc(ActuarSc) Degree Curriculum

1. General guideline for contact hours requirement in the BSc (Actuarial Science) Degree Curriculum

- (a) A 6-credit course has around 120-180 total study hours, including contact hours, study time, assignment and assessment.
- (b) About 30% of the total study hours are actual contact hours in the form of a class, e.g. lecture hours.
- (c) A 6-credit course has around 36 to 45 lecture hours.
- (d) For lecture-based courses, normally there will be tutorial/discussion sessions.
- (e) For courses employing a non-lecture or lab-based approach, e.g. IT-based or project-based courses, students are expected to devote about 120-180 hours for a 6-credit course.

2. Credit Unit Statement of the BSc (Actuarial Science) Degree Curriculum

The BSc(Actuarial Science) degree curriculum consists of five major types of courses based on the learning activities. The courses in the curriculum are 6 credits. Examples of the contact hours requirements for the five categories of courses are described as follows.

(a) Lecture-based courses (6 credits)

Contact hours: 36 hours of lectures and 12 hours of tutorial/discussion

These courses are taught predominantly by lectures and tutorials. Assessment is by a combination of examination (0-80%) and continuous assessment (20-100%). Continuous assessment tasks include written assignments (totaling no more than 8,000 words) such as essays and project reports, and oral presentations. Details of the assessment tasks can be found in the description of individual courses.

(b) Lecture with laboratory component courses (6 credits)

Contact hours for 6-credit course: 24 hours of lectures, 24 hours of laboratory and 6 hours of tutorial

These courses are taught by a combination of lectures and laboratory/practical sessions. Assessment is by a combination of examination (0-70%) and continuous assessment (30-100%). Continuous assessment tasks include written assignments (totaling no more than 8,000 words) such as essays, laboratory reports, and project reports, and oral presentations. Details of the assessment tasks can be found in the description of individual courses.

(c) Laboratory and Workshop courses (6 credits)

Contact hours: 48 hours of laboratory or workshop and 12 hours of tutorial

These courses aim at enriching the student's research skills and encourage group work through hands-on activities in which science research is introduced. Students are expected to spend an additional 100 hours on self-study, preparation work for the laboratory, and writing reports. Continuous assessment tasks (100%) include written assignments (totaling no more than 8,000 words) such as laboratory report for each experiment (normally no more than 10 experiments) and essays. Details of the assessment tasks can be found in the description of individual courses.

(d) Project-based courses (6 credits)

These courses aim at providing students with an opportunity to pursue their own research interest under the supervision of a teacher. The teacher normally meets with the student weekly to discuss project progress. Assessment task is normally through research reports or a dissertation (totaling no more than 10,000 words for a 6-credit course and 20,000 words for a 12-credit course). Oral presentation will form part of the assessment. Details of the assessment tasks can be found in the description of individual courses.

(e) Internship (6 credits)

Students have to undertake at least 6 months or 120 working days of internship work Internships aim to offer students the opportunity to gain work experience related to their major of study. The teacher meets with the student regularly to discuss work progress. Students have to undertake at least 6 months or 120 working days of internship work arranged formally. Assessment tasks normally include the following outputs: a written report of no more than 2000 words and feedback from the internship supervisor and an oral presentation on students' internship experience. Details of the assessment tasks can be found in the description of individual courses.

List of BSc(ActuarSc) Courses

SECTION III List of BASc(ActuarSc) Courses* on offer in 2024/2025 and 2025/2026^{*}

Course Code		Credit	Pre-requisite	Avail	able in	Semester offered in 2024 - 2025	Exam. held in 2024 - 2025	Quota	ota Communication -intensive	Course Coordinator	Major / Minor (The Major/Minor that this course appears as.)			
				2024 - 2025	2025 - 2026	0=year long 1=1st sem 2=2nd sem S=Summer					Disciplinary Core Course	Disciplinary Elective	Capstone - Disciplinary Core Course	Capstone - Disciplinary Elective
Centre for Ap	plied English Studies													
CAES1000	Core University English	6	NIL	Y	Y	1, 2	No exam		Y	Dr A Yau, English				
CAES9820	Academic English for science students	6	NIL	Y	Y	1, 2	No exam		Y	Mr A Wong (1st sem); Ms M Zee (2nd sem), English				
CAES9821	Professional and technical communication for statistical sciences	6	NIL	Y	Y	1, 2	No exam		Y	Mr A Wong (1st sem); Ms M Zee (2nd sem), English				
School of Chi	inese													
CSCI9001	Practical Chinese for science students	6	NIL	Y	Y	1, 2	Dec, May		Y	Dr H F Poon, Chinese				
Department o	of Mathematics		1							1			1	
MATH1821	Mathematical methods for actuarial science I	6	Level 4 or above in HKDSE Mathematics plus Module 1, or Level 4 or above in HKDSE Mathematics plus Module 2, or equivalent; and Not for students who have passed MATH1013 or (MATH1851 and MATH1853), or have already enrolled in these courses. For BSc(ActuarSc) students only.	Y	Y	1	Dec		N	Dr K H Law, Mathematics	BSc in Actuarial Science (2024,2023,2022,2021, 2020,2019,2018,2017)			
MATH2822	Mathematical methods for actuarial science II	6	Pass in MATH1821. For BSc(ActuarSc) students only.	Y	Y	2	Мау		N	Dr K H Law, Mathematics	BSc in Actuarial Science (2024,2023,2022,2021, 2020,2019,2018,2017)			
Department o	of Statistics & Actuarial Science													
STAT2901	Probability and statistics: foundations of actuarial science	6	Pass in MATH1821 [for BSc(ActuarSc) students] or already enrolled in this course, or Pass in MATH1013 or already enrolled in this course [for students outside the BSc(ActuarSc) programme]; and Not for students who have passed or enrolled in any of these courses: STAT1601, STAT1602, STAT1603, STAT2601	Y	Y	2	Мау		N	Prof S M S Lee, Statistics & Actuarial Science	BSc in Actuarial Science (2024,2023,2022,2021, 2020,2019,2018,2017)	Minor in Actuarial Studies (2020,2019,2018,2017)		
STAT2902	Financial mathematics	6	Pass in STAT2901, or already enrolled in this course; and Not for students who have passed in STAT3615, or already enrolled in this course.	Y	Y	2	Мау		N	Prof K C Cheung, Statistics & Actuarial Science	BSc in Actuarial Science (2024,2023,2022,2021, 2020,2019,2018,2017)			
STAT3901	Life contingencies I	6	(Pass in STAT2602 and STAT3615) or (Pass in STAT2902 and (Pass in STAT3902 or already enrolled in this course)) or (Pass in STAT2602 and STAT2902)	Y	Y	1	Dec		N	Dr K P Wat, Statistics & Actuarial Science	BSc in Actuarial Science (2024,2023,2022,2021, 2020,2019,2018,2017)	Minor in Actuarial Studies (2024,2023,2022,2021, 2020,2019,2018,2017)		
STAT3902	Statistical models	6	Pass in STAT2901; and Not for students who have passed in STAT2602, or already enrolled in this course; and For BSc(Actuarial Science) students only.	Y	Y	1	Dec		N	Dr M Hofert, Statistics & Actuarial Science	BSc in Actuarial Science (2024,2023,2022,2021, 2020,2019,2018,2017)			
STAT3903	Stochastic models	6	Pass in STAT2901; and Not for students who have passed in MATH3603, or have already enrolled in this course; and Not for students who have passed in STAT3603, or have already enrolled in this course; and For BSc(Actuarial Science) students only.	Y	Y	2	Мау		N	Prof K Zhu, Statistics & Actuarial Science	BSc in Actuarial Science (2024,2023,2022,2021, 2020,2019,2018,2017)			
STAT3904	Corporate finance for actuarial science	6	[(Pass in ACCT1101 and STAT2902) or (Pass in STAT3615)]; and Not for students who have passed in FINA1310, or have already enrolled in this course.	Y	Y	1	Dec		N	Dr D Lee, Statistics & Actuarial Science	BSc in Actuarial Science (2024,2023,2022,2021, 2020,2019,2018,2017)	Minor in Actuarial Studies (2024,2023,2022,2021, 2020,2019,2018,2017)		

* This list only includes courses offered by the Department of Statistics & Actuarial Science and the Department of Mathematics and language courses. ^ Availability of courses in 2025-2026 is subject to change.

STAT3905	Introduction to financial derivatives	6	Pass in STAT2902; and Not for students who have passed or already enrolled in any of the following courses: FINA2322, MATH3906, STAT3618; and For BSc(Actuarial Science) students only.	Y	Y	2	May	 Ν	Prof T Boonen, Statistics & Actuarial Science	BSc in Actuarial Science (2024,2023,2022,2021, 2020,2019,2018,2017)		
STAT3906	Risk theory I	6	Pass in STAT3903, or already enrolled in this course; or Pass in MATH3603 or STAT3603	Y	Y	1	Dec	 N	Prof K C Cheung, Statistics & Actuarial Science	BSc in Actuarial Science (2024,2023,2022,2021, 2020,2019,2018,2017)	Minor in Actuarial Studies (2024,2023,2022,2021, 2020,2019,2018,2017)	
STAT3907	Linear models and forecasting	6	Pass in STAT2602 or STAT3902, or already enrolled in this course; and Not for students who have passed in STAT3600, or have already enrolled in this course; and Not for students who have passed in STAT4601, or have already enrolled in this course; and Not for students who have passed in ECON2280, or have already enrolled in this course; and For BSc(Actuarial Science) students only.	Y	Y	2	May	 Ν	Mr H Y Y Cheung, Statistics & Actuarial Science	BSc in Actuarial Science (2024,2023,2022,2021, 2020,2019,2018,2017)		
STAT3908	Credibility theory and loss distributions	6	Pass in STAT2602 or STAT3902 or STAT3906	Y	Y	2	Мау	 N	Prof M Hofert, Statistics & Actuarial Science	BSc in Actuarial Science (2024,2023,2022,2021, 2020,2019,2018,2017)	Minor in Actuarial Studies (2024,2023,2022,2021, 2020,2019,2018,2017)	
STAT3909	Life contingencies II	6	Pass in STAT3901, or already enrolled in this course; and For BSc(Actuarial Science) students only.	Y	Y	2	Мау	 N	Dr D Lee, Statistics & Actuarial Science	BSc in Actuarial Science (2024,2023,2022,2021, 2020,2019,2018,2017)		
STAT3910	Financial economics I	6	Pass in STAT2602 or STAT3902; and Not for students who have passed in STAT3618, or have already enrolled in this course; and Not for students who have passed in FINA2322, or have already enrolled in this course; and Not for students who have passed in MATH3906, or have already enrolled in this course	Y	Y	1	Dec	 Ν	Dr A Lo, Statistics & Actuarial Science	BSc in Actuarial Science (2024,2023,2022,2021, 2020,2019,2018,2017)	Minor in Actuarial Studies (2024, 2023, 2022, 2021, 2020, 2019, 2018, 2017)	
STAT3911	Financial economics II	6	Pass in MATH3603 or STAT3603 or STAT3903 or STAT3910; and Not for students who have passed in MATH3906, or have already enrolled in this course.	Y	Y	2	Мау	 Y	Prof W Li, Statistics & Actuarial Science	BSc in Actuarial Science (2017)	BSc in Actuarial Science (2024, 2023, 2022, 2021, 2020, 2019, 2018); Major in Risk Management (2024, 2023, 2022, 2021, 2020, 2019, 2018, 2017); Minor in Actuarial Studies (2024, 2023, 2022, 2021, 2020, 2019, 2018, 2017)	
STAT3951	Topics on advanced actuarial modelling	6	Pass in STAT3906, or already enrolled in this course; and Pass in STAT3910, or already enrolled in this course; and For BSc(Actuarial Science) students only.	Y	Y	2	Мау	 Ν	Dr D Lee, Statistics & Actuarial Science		BSc in Actuarial Science (2024,2023,2022,2021, 2020,2019,2018,2017)	
STAT3953	Fundamentals of actuarial practice	6	Pass in STAT3901.	Y	Y	1	No exam	 Ν	Dr K P Wat, Statistics & Actuarial Science		BSc in Actuarial Science (2024,2023,2022,2021, 2020,2019,2018,2017); Minor in Actuarial Studies (2024,2023,2022,2021, 2020,2019,2018,2017)	
STAT3954	Current topics in actuarial science	6	Pass in STAT3901, or already enrolled in this course; or Pass in STAT3909, or already enrolled in this course; and For BSc(Actuarial Science) students only.	N	N			 Ν	TBC, Statistics & Actuarial Science		BSc in Actuarial Science (2024,2023,2022,2021, 2020,2019,2018,2017)	
STAT3956	Life contingencies III	6	Pass in STAT3909; and For BSc(Actuarial Science) students only.	Y	Y	1	Dec	 N	Prof T Boonen, Statistics & Actuarial Science		BSc in Actuarial Science (2024,2023,2022,2021, 2020,2019,2018,2017)	

STAT4711	Capstone experience for actuarial science undergraduates	6	Pass in at least 24 credits of advanced level disciplinary core/elective courses in BSc(Actuarial Science) programme including (Pass in STAT3901, or already enrolled in this course; or Pass in STAT3909, or already enrolled in this course); and This capstone course is only for BSc(Actuarial Science) students, and is mutually exclusive with STAT4767 and STAT4798. The earliest that a student is allowed to take this capstone course is their year 3 study.	Y	Y	1, 2	No exam	50	N	Prof K C Cheung, Statistics & Actuarial Science			BSc in Actuarial Science (2024, 2023, 2022, 2021, 2020, 2019, 2018, 2017)
STAT4767	Actuarial science internship	6	Pass in at least 24 credits of advanced level disciplinary core/elective courses in BSc(Actuarial Science) programme including STAT3901; and This capstone course is only for BSc(Actuarial Science) students; and is mutually exclusive with STAT4711. The earliest that a student is allowed to take this capstone course is their year 3 study.	Y	Y	1, 2	No exam		Y	Dr E A L Li, Statistics & Actuarial Science			BSc in Actuarial Science (2024,2023,2022,2021, 2020,2019,2018,2017)
STAT4798	Statistics and actuarial science project	6	Pass in at least 24 credits of advanced level disciplinary core/elective courses in BSc(Actuarial Science) programme including STAT3902 and STAT3907; and Pass or already enrolled in at least one of the following courses: STAT3911, STAT4602, STAT4904; and This capstone course is only for BSc(Actuarial Science) students; and subject to the consent of course coordinator. This course is mutually exclusive with STAT4711. The earliest that a student is allowed to take this capstone course is their year 3 study.	Y	Y	1, 2	No exam	50	Ν	Prof S M S Lee, Statistics & Actuarial Science			BSc in Actuarial Science (2024,2023,2022,2021, 2020,2019,2018,2017)
STAT4901	Risk theory II	6	Pass in STAT3906	N	N				N	TBC, Statistics & Actuarial Science		BSc in Actuarial Science (2024,2023,2022,2021, 2020,2019,2018,2017)	
STAT4902	Selected topics in actuarial science	6	Pass in STAT3906	N	N				Y	TBC, Statistics & Actuarial Science		BSc in Actuarial Science (2024,2023,2022,2021, 2020,2019,2018,2017)	
STAT4903	Actuarial techniques for general insurance	6	Pass in STAT3906, or already enrolled in this course.	Y	Y	1	Dec		N	Dr D Lee, Statistics & Actuarial Science		BSc in Actuarial Science (2024,2023,2022,2021, 2020,2019,2018,2017); Minor in Actuarial Studies (2024,2023,2022,2021, 2020,2019,2018,2017)	
STAT4904	Statistical learning for risk modelling	6	Pass in STAT3907 or STAT3600; and Not for students who have passed in STAT3612, or already enrolled in this course; and For BSc(Actuarial Science) students only.	Y	Y	2	Мау		N	Dr A Lo, Statistics & Actuarial Science	BSc in Actuarial Science (2024,2023,2022,2021, 2020,2019,2018)	BSc in Actuarial Science (2017)	
STAT7609	Research methods in statistics	6	Pass in STAT3600 or STAT3907	Y	Y	1	Dec		N	Prof K Zhu, Statistics & Actuarial Science			
STAT7610	Advanced probability	6	Pass in STAT3603 or STAT3903	Y	Y	2	May		N	Prof M Hofert, Statistics & Actuarial Science			
STAT7611	Computational statistics	6	Pass in STAT3600 or STAT3907	N	N				N	TBC, Statistics & Actuarial Science			
STAT7614	Advanced statistical modelling	6	Pass in STAT3600 or STAT3907	Y	Y	2	May		N	Prof C Wang, Statistics & Actuarial Science			
STAT7615	Advanced quantitative risk management and finance	6	Pass in STAT4608	N	N				N	TBC, Statistics & Actuarial Science			

SECTION IV Equivalency of HKDSE and other qualifications

HUDGE	Card	Equivalent Qualification to HKDSE										
HKDSE	Grade	IB	GCE	SATII	AP	Gao Kao (高考)						
Biology	3 or above	Biology (SL/HL)	Biology (AL)	Biology	Biology							
Chemistry	3 or above	Chemistry (SL/HL)	Chemistry (AL)	Chemistry	Chemistry							
Physics	3 or above	Physics (SL/HL)	Physics (AL)	Physics	Physics B or C	Equivalent to fulfillment of all						
Mathematics	2 or above	Mathematics (SL)/Mathematical Studies (SL)	Mathematics (AL)	Mathematics Level 1 or 2		HKDSE requirements						
Mathematics + (M1 or M2)	2 or above	Mathematics (HL)/Mathematical Studies (HL)	Pure Mathematics (AL) Further Mathematics (AL)		Calculus AB or BC							

Table of Equivalence between HKDSE and Other Qualifications

Note:

HL: Higher Level

SL: Standard Level

AL: Advanced Level

Remarks:

For science students admitted through non-JUPAS scheme, the equivalent subject qualification(s) to HKDSE, if possessed, can be identified by the SIS for on-line course selection.

For any non-science students admitted through non-JUPAS scheme, they are still required to obtain the approval from the Course Selection Adviser (or designated Course Approver) of the course offering department/school via Science Online Application Submission System (OASS) https://webapp.science.hku.hk/intranet/OnlineFormUG.html even they have possessed the equivalent HKDSE subject qualification(s) to meet the course prerequisite requirement. Once approval is given, they need to forward it to their home faculties to add the course on-line.

Programme Title	BSc in Actuarial Science
Offered to students	2024
admitted to Year 1 in	

The Actuarial Science curriculum aims at providing formal academic and professional training to students who wish to join the actuarial profession. Although actuarial science is a separate discipline with its own area of knowledge, modern actuarial training requires multidisciplinary knowledge such as probability, statistics, economics, investment, finance, law, taxation, and accounting. The Actuarial Science curriculum reflects this by incorporating various interdisciplinary courses into the basic actuarial training. The programme is set up to equip students with solid background in actuarial science, to develop their confidence and analytical skills to define and tackle problems in actuarial science and other related fields. Specifically, the programme is designed to provide adequate knowledge for students to sit for the early professional examinations organized by international actuarial organizations so that they can successfully join the actuarial profession after graduation. In addition, the programme provides enough academic training for students who wish to pursue postgraduate studies in actuarial science or other related areas.

Learning Outcomes:

By the end of this programme, students should be able to:

- PLO 1: understand and apply various analytic and quantitative methods to define and solve problems in insurance, finance, economics, investment, pension, financial risk management and demography (by means of coursework and tutorial classes and/or research-based project in the curriculum)
- PLO 2: understand and identify the nature of insurance, finance and investment risks (by means of coursework and tutorial classes and/or research-based project in the curriculum)
- PLO 3 : develop analytical skills to evaluate and measure various kinds of risk, and appraise the related moral and ethical issues (by means of coursework and tutorial classes and/or research-based project in the curriculum)
- PLO 4 : formulate effective business strategies to manage various kinds of risk (by means of coursework and tutorial classes and/or research-based project in the curriculum)
- PLO 5 : communicate and collaborate with people effectively on issues related to actuarial science (by means of coursework and tutorial classes and/or research-based project in the curriculum)
- PLO 6 : discuss current actuarial issues and acquire and apply practical knowledge in some specially designed courses (by means of coursework and tutorial classes and/or research-based project in the curriculum)

Required course	s (132 creaits)
1. Year I Courses	
	Courses (42 credits)
ACCT1101	Introduction to financial accounting (6)
ECON1210	Introductory microeconomics (6)
ECON1220	Introductory macroeconomics (6)
MATH1821	Mathematical methods for actuarial science I (6)
MATH2822	Mathematical methods for actuarial science II (6)
STAT2901	Probability and statistics: foundations of actuarial science (6)
STAT2902	Financial mathematics (6)
2. Year II Courses	
	Courses (42 credits)
COMP1117	Computer programming (6)
STAT3901	Life contingencies I (6)
STAT3902	Statistical models (6)
STAT3903	Stochastic models (6)
STAT3904	Corporate finance for actuarial science (6)
STAT3905	Introduction to financial derivatives (6)
STAT3907	Linear models and forecasting (6)
3. Year III Courses	
Disciplinary Core	Courses (30 credits)
STAT3906	Risk theory I (6)
STAT3908	Credibility theory and loss distributions (6)
STAT3909	Life contingencies II (6)
STAT3910	Financial economics I (6)
STAT4904	Statistical learning for risk modelling (6)
4. Year IV Courses	
Disciplinary Elect	ives (12 credits)
At least 12 credi	ts selected from the following courses:
STAT3911	Financial economics II (6)
STAT3951	Topics on advanced actuarial modelling (6)
STAT3953	Fundamentals of actuarial practice (6)
STAT3954	Current topics in actuarial science (6)
STAT3956	Life contingencies III (6)
STAT4901	Risk theory II (6)
STAT4902	Selected topics in actuarial science (6)

STAT4903

Actuarial techniques for general insurance (6)

5. Capstone Requirement (6 credits)

At least 6 credits selected from the following courses:		
STAT4711	Capstone experience for actuarial science undergraduates (6)	
STAT4767	Actuarial science internship (6)	
STAT4798	Statistics and actuarial science project (6)	

Notes:

1. Students are expected to be in full-time status for eight academic semesters (in addition to their 6-month or longer full-time internships) in order to fulfill the degree requirements.

2. Students may optionally take Majors or Minors outside the BSc(ActuarSc) programme, provided that they fully satisfy the requirements.

Remarks:

Programme Title	BSc in Actuarial Science
Offered to students	2023
admitted to Year 1 in	

The Actuarial Science curriculum aims at providing formal academic and professional training to students who wish to join the actuarial profession. Although actuarial science is a separate discipline with its own area of knowledge, modern actuarial training requires multidisciplinary knowledge such as probability, statistics, economics, investment, finance, law, taxation, and accounting. The Actuarial Science curriculum reflects this by incorporating various interdisciplinary courses into the basic actuarial training. The programme is set up to equip students with solid background in actuarial science, to develop their confidence and analytical skills to define and tackle problems in actuarial science and other related fields. Specifically, the programme is designed to provide adequate knowledge for students to sit for the early professional examinations organized by international actuarial organizations so that they can successfully join the actuarial profession after graduation. In addition, the programme provides enough academic training for students who wish to pursue postgraduate studies in actuarial science or other related areas.

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By the end of this programme, students should be able to:

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- PLO 2 : understand and identify the nature of insurance, finance and investment risks (by means of coursework and tutorial classes and/or research-based project in the curriculum)
- PLO 3 : develop analytical skills to evaluate and measure various kinds of risk, and appraise the related moral and ethical issues (by means of coursework and tutorial classes and/or research-based project in the curriculum)
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- PLO 5 : communicate and collaborate with people effectively on issues related to actuarial science (by means of coursework and tutorial classes and/or research-based project in the curriculum)
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Required course	s (132 credits)
1. Year I Courses	
	Courses (42 credits)
ACCT1101	Introduction to financial accounting (6)
ECON1210	Introductory microeconomics (6)
ECON1220	Introductory macroeconomics (6)
MATH1821	Mathematical methods for actuarial science I (6)
MATH2822	Mathematical methods for actuarial science II (6)
STAT2901	Probability and statistics: foundations of actuarial science (6)
STAT2902	Financial mathematics (6)
2. Year II Courses	
Disciplinary Core	Courses (42 credits)
COMP1117	Computer programming (6)
STAT3901	Life contingencies I (6)
STAT3902	Statistical models (6)
STAT3903	Stochastic models (6)
STAT3904	Corporate finance for actuarial science (6)
STAT3905	Introduction to financial derivatives (6)
STAT3907	Linear models and forecasting (6)
3. Year III Courses	6
Disciplinary Core	Courses (30 credits)
STAT3906	Risk theory I (6)
STAT3908	Credibility theory and loss distributions (6)
STAT3909	Life contingencies II (6)
STAT3910	Financial economics I (6)
STAT4904	Statistical learning for risk modelling (6)
4. Year IV Courses	S
Disciplinary Elect	ives (12 credits)
At least 12 cred	its selected from the following courses:
STAT3911	Financial economics II (6)
STAT3951	Topics on advanced actuarial modelling (6)
STAT3953	Fundamentals of actuarial practice (6)
STAT3954	Current topics in actuarial science (6)
STAT3956	Life contingencies III (6)
STAT4901	Risk theory II (6)
STAT4902	Selected topics in actuarial science (6)

STAT4903

Actuarial techniques for general insurance (6)

5. Capstone Requirement (6 credits)

At least 6 credits selected from the following courses:STAT4711Capstone experience for actuarial science undergraduates (6)STAT4767Actuarial science internship (6)STAT4798Statistics and actuarial science project (6)

Notes:

1. Students are expected to be in full-time status for eight academic semesters (in addition to their 6-month or longer full-time internships) in order to fulfill the degree requirements.

2. Students may optionally take Majors or Minors outside the BSc(ActuarSc) programme, provided that they fully satisfy the requirements.

Remarks:

Programme Title	BSc in Actuarial Science
Offered to students	2022
admitted to Year 1 in	

The Actuarial Science curriculum aims at providing formal academic and professional training to students who wish to join the actuarial profession. Although actuarial science is a separate discipline with its own area of knowledge, modern actuarial training requires multidisciplinary knowledge such as probability, statistics, economics, investment, finance, law, taxation, and accounting. The Actuarial Science curriculum reflects this by incorporating various interdisciplinary courses into the basic actuarial training. The programme is set up to equip students with solid background in actuarial science, to develop their confidence and analytical skills to define and tackle problems in actuarial science and other related fields. Specifically, the programme is designed to provide adequate knowledge for students to sit for the early professional examinations organized by international actuarial organizations so that they can successfully join the actuarial profession after graduation. In addition, the programme provides enough academic training for students who wish to pursue postgraduate studies in actuarial science or other related areas.

Learning Outcomes:

By the end of this programme, students should be able to:

- PLO 1: understand and apply various analytic and quantitative methods to define and solve problems in insurance, finance, economics, investment, pension, financial risk management and demography (by means of coursework and tutorial classes and/or research-based project in the curriculum)
- PLO 2 : understand and identify the nature of insurance, finance and investment risks (by means of coursework and tutorial classes and/or research-based project in the curriculum)
- PLO 3 : develop analytical skills to evaluate and measure various kinds of risk, and appraise the related moral and ethical issues (by means of coursework and tutorial classes and/or research-based project in the curriculum)
- PLO 4 : formulate effective business strategies to manage various kinds of risk (by means of coursework and tutorial classes and/or research-based project in the curriculum)
- PLO 5 : communicate and collaborate with people effectively on issues related to actuarial science (by means of coursework and tutorial classes and/or research-based project in the curriculum)
- PLO 6 : discuss current actuarial issues and acquire and apply practical knowledge in some specially designed courses (by means of coursework and tutorial classes and/or research-based project in the curriculum)

H		
Required courses	(132 credits)	
1. Year I Courses		
Disciplinary Core C		
ACCT1101	Introduction to financial accounting (6)	
ECON1210	Introductory microeconomics (6)	
ECON1220	Introductory macroeconomics (6)	
MATH1821	Mathematical methods for actuarial science I (6)	
MATH2822	Mathematical methods for actuarial science II (6)	
STAT2901	Probability and statistics: foundations of actuarial science (6)	
STAT2902	Financial mathematics (6)	
2. Year II Courses		
Disciplinary Core C	ourses (42 credits)	
COMP1117	Computer programming (6)	
STAT3901	Life contingencies I (6)	
STAT3902	Statistical models (6)	
STAT3903	Stochastic models (6)	
STAT3904	Corporate finance for actuarial science (6)	
STAT3905	Introduction to financial derivatives (6)	
STAT3907	Linear models and forecasting (6)	
3. Year III Courses		
Disciplinary Core C		
STAT3906	Risk theory I (6)	
STAT3908	Credibility theory and loss distributions (6)	
STAT3909	Life contingencies II (6)	
STAT3910	Financial economics I (6)	
STAT4904	Statistical learning for risk modelling (6)	
4. Year IV Courses		
Disciplinary Electives (12 credits)		
	selected from the following courses:	
STAT3911	Financial economics II (6)	
STAT3951	Topics on advanced actuarial modelling (6)	[previous title: Further topics in contingencies to new course name (6)]
STAT3953	Fundamentals of actuarial practice (6)	
STAT3954	Current topics in actuarial science (6)	
STAT3956	Life contingencies III (6)	[previous title: Pension funds and pension mathematics to new course name (6)]
STAT4901	Risk theory II (6)	

STAT4902	Selected topics in actuarial science (6)	
STAT4903	Actuarial techniques for general insurance (6)	
5. Capstone Requirement (6 credits)		
At least 6 credits selected from the following courses:		
STAT4711	Capstone experience for actuarial science undergraduates (6)	
STAT4767	Actuarial science internship (6)	

STAT4798 Statistics and actuarial science project (6)

Notes:

1. Students are expected to be in full-time status for eight academic semesters (in addition to their 6-month or longer full-time internships) in order to fulfill the degree requirements.

2. Students may optionally take Majors or Minors outside the BSc(ActuarSc) programme, provided that they fully satisfy the requirements.

Remarks:

Programme Title	BSc in Actuarial Science
Offered to students	2021
admitted to Year 1 in	

The Actuarial Science curriculum aims at providing formal academic and professional training to students who wish to join the actuarial profession. Although actuarial science is a separate discipline with its own area of knowledge, modern actuarial training requires multidisciplinary knowledge such as probability, statistics, economics, investment, finance, law, taxation, and accounting. The Actuarial Science curriculum reflects this by incorporating various interdisciplinary courses into the basic actuarial training. The programme is set up to equip students with solid background in actuarial science, to develop their confidence and analytical skills to define and tackle problems in actuarial science and other related fields. Specifically, the programme is designed to provide adequate knowledge for students to sit for the early professional examinations organized by international actuarial organizations so that they can successfully join the actuarial profession after graduation. In addition, the programme provides enough academic training for students who wish to pursue postgraduate studies in actuarial science or other related areas.

Learning Outcomes:

By the end of this programme, students should be able to:

- PLO 1: understand and apply various analytic and quantitative methods to define and solve problems in insurance, finance, economics, investment, pension, financial risk management and demography (by means of coursework and tutorial classes and/or research-based project in the curriculum)
- PLO 2 : understand and identify the nature of insurance, finance and investment risks (by means of coursework and tutorial classes and/or research-based project in the curriculum)
- PLO 3 : develop analytical skills to evaluate and measure various kinds of risk, and appraise the related moral and ethical issues (by means of coursework and tutorial classes and/or research-based project in the curriculum)
- PLO 4 : formulate effective business strategies to manage various kinds of risk (by means of coursework and tutorial classes and/or research-based project in the curriculum)
- PLO 5 : communicate and collaborate with people effectively on issues related to actuarial science (by means of coursework and tutorial classes and/or research-based project in the curriculum)
- PLO 6 : discuss current actuarial issues and acquire and apply practical knowledge in some specially designed courses (by means of coursework and tutorial classes and/or research-based project in the curriculum)

Beguired courses (122 orodita)	
Required courses (132 credits)		
1. Year I Courses	(10 and dita)	
Disciplinary Core Co		
ACCT1101	Introduction to financial accounting (6)	
ECON1210	Introductory microeconomics (6)	
ECON1220	Introductory macroeconomics (6)	
MATH1821	Mathematical methods for actuarial science I (6)	
MATH2822	Mathematical methods for actuarial science II (6)	
STAT2901	Probability and statistics: foundations of actuarial science (6)	
STAT2902	Financial mathematics (6)	
2. Year II Courses		
Disciplinary Core Co		
COMP1117	Computer programming (6)	
STAT3901	Life contingencies I (6)	
STAT3902	Statistical models (6)	
STAT3903	Stochastic models (6)	
STAT3904	Corporate finance for actuarial science (6)	
STAT3905	STAT3905 Introduction to financial derivatives (6)	
STAT3907	Linear models and forecasting (6)	
3. Year III Courses		
Disciplinary Core Co		
STAT3906	Risk theory I (6)	
STAT3908	Credibility theory and loss distributions (6)	
STAT3909	Life contingencies II (6)	
STAT3910	Financial economics I (6)	
STAT4904	Statistical learning for risk modelling (6)	
4. Year IV Courses		
Disciplinary Electives (12 credits)		
At least 12 credits s	selected from the following courses:	
STAT3911	Financial economics II (6)	
STAT3951	Topics on advanced actuarial modelling (6)	[previous title: Further topics in contingencies to new course name (6)]
STAT3953	Fundamentals of actuarial practice (6)	
STAT3954	Current topics in actuarial science (6)	
STAT3956	Life contingencies III (6)	[previous title: Pension funds and pension
STAT4901	Risk theory II (6)	mathematics to new course name (6)]

STAT4902	Selected topics in actuarial science (6)	
STAT4903	Actuarial techniques for general insurance (6)	
5. Capstone Requirement (6 credits)		
At least 6 credits selected from the following courses:		
STAT4711	Capstone experience for actuarial science undergraduates (6)	
STAT4767	Actuarial science internship (6)	

STAT4798 Statistics and actuarial science project (6)

Notes:

1. Students are expected to be in full-time status for eight academic semesters (in addition to their 6-month or longer full-time internships) in order to fulfill the degree requirements.

2. Students may optionally take Majors or Minors outside the BSc(ActuarSc) programme, provided that they fully satisfy the requirements.

Remarks:

Programme Title	BSc in Actuarial Science
Offered to students	2020
admitted to Year 1 in	

The Actuarial Science curriculum aims at providing formal academic and professional training to students who wish to join the actuarial profession. Although actuarial science is a separate discipline with its own area of knowledge, modern actuarial training requires multidisciplinary knowledge such as probability, statistics, economics, investment, finance, law, taxation, and accounting. The Actuarial Science curriculum reflects this by incorporating various interdisciplinary courses into the basic actuarial training. The programme is set up to equip students with solid background in actuarial science, to develop their confidence and analytical skills to define and tackle problems in actuarial science and other related fields. Specifically, the programme is designed to provide adequate knowledge for students to sit for the early professional examinations organized by international actuarial organizations so that they can successfully join the actuarial profession after graduation. In addition, the programme provides enough academic training for students who wish to pursue postgraduate studies in actuarial science or other related areas.

Learning Outcomes:

By the end of this programme, students should be able to:

- PLO 1: understand and apply various analytic and quantitative methods to define and solve problems in insurance, finance, economics, investment, pension, financial risk management and demography (by means of coursework and tutorial classes and/or research-based project in the curriculum)
- PLO 2 : understand and identify the nature of insurance, finance and investment risks (by means of coursework and tutorial classes and/or research-based project in the curriculum)
- PLO 3 : develop analytical skills to evaluate and measure various kinds of risk, and appraise the related moral and ethical issues (by means of coursework and tutorial classes and/or research-based project in the curriculum)
- PLO 4 : formulate effective business strategies to manage various kinds of risk (by means of coursework and tutorial classes and/or research-based project in the curriculum)
- PLO 5 : communicate and collaborate with people effectively on issues related to actuarial science (by means of coursework and tutorial classes and/or research-based project in the curriculum)
- PLO 6 : discuss current actuarial issues and acquire and apply practical knowledge in some specially designed courses (by means of coursework and tutorial classes and/or research-based project in the curriculum)

Required courses (132 credits)			
1. Year I Courses				
Disciplinary Core Co				
ACCT1101	Introduction to financial accounting (6)			
ECON1210	Introductory microeconomics (6)			
ECON1220	Introductory macroeconomics (6)			
MATH1821	Mathematical methods for actuarial science I (6)			
MATH2822	Mathematical methods for actuarial science II (6)			
STAT2901 Probability and statistics: foundations of actuarial science (6)				
STAT2902	Financial mathematics (6)			
2. Year II Courses				
Disciplinary Core Co				
COMP1117	Computer programming (6)			
STAT3901	Life contingencies I (6)			
STAT3902	Statistical models (6)			
STAT3903	Stochastic models (6)			
STAT3904	Corporate finance for actuarial science (6)			
STAT3905	Introduction to financial derivatives (6)			
STAT3907	Linear models and forecasting (6)			
3. Year III Courses				
Disciplinary Core Co				
STAT3906	Risk theory I (6)			
STAT3908	Credibility theory and loss distributions (6)			
STAT3909	Life contingencies II (6)			
STAT3910	Financial economics I (6)			
STAT4904	Statistical learning for risk modelling (6)			
4. Year IV Courses				
Disciplinary Elective				
	selected from the following courses:			
STAT3911	Financial economics II (6)			
STAT3951	Topics on advanced actuarial modelling (6)	[previous title: Further topics in contingencies to new course name (6)]		
STAT3953	Fundamentals of actuarial practice (6)			
STAT3954	Current topics in actuarial science (6)			
STAT3956	Life contingencies III (6)	[previous title: Pension funds and pension		
STAT4901	Risk theory II (6)	mathematics to new course name (6)]		

STAT4902	Selected topics in actuarial science (6)
STAT4903	Actuarial techniques for general insurance (6)
5. Capstone Requi	irement (6 credits)
At least 6 credits	selected from the following courses:
STAT4711	Capstone experience for actuarial science undergraduates (6)
STAT4767	Actuarial science internship (6)

STAT4798 Statistics and actuarial science project (6)

Notes:

1. Students are expected to be in full-time status for eight academic semesters (in addition to their 6-month or longer full-time internships) in order to fulfill the degree requirements.

2. Students may optionally take Majors or Minors outside the BSc(ActuarSc) programme, provided that they fully satisfy the requirements.

Remarks:

Programme Title	BSc in Actuarial Science
Offered to students	2019
admitted to Year 1 in	

The Actuarial Science curriculum aims at providing formal academic and professional training to students who wish to join the actuarial profession. Although actuarial science is a separate discipline with its own area of knowledge, modern actuarial training requires multidisciplinary knowledge such as probability, statistics, economics, investment, finance, law, taxation, and accounting. The Actuarial Science curriculum reflects this by incorporating various interdisciplinary courses into the basic actuarial training. The programme is set up to equip students with solid background in actuarial science, to develop their confidence and analytical skills to define and tackle problems in actuarial science and other related fields. Specifically, the programme is designed to provide adequate knowledge for students to sit for the early professional examinations organized by international actuarial organizations so that they can successfully join the actuarial profession after graduation. In addition, the programme provides enough academic training for students who wish to pursue postgraduate studies in actuarial science or other related areas.

Learning Outcomes:

By the end of this programme, students should be able to:

- PLO 1: understand and apply various analytic and quantitative methods to define and solve problems in insurance, finance, economics, investment, pension, financial risk management and demography (by means of coursework and tutorial classes and/or research-based project in the curriculum)
- PLO 2 : understand and identify the nature of insurance, finance and investment risks (by means of coursework and tutorial classes and/or research-based project in the curriculum)
- PLO 3 : develop analytical skills to evaluate and measure various kinds of risk, and appraise the related moral and ethical issues (by means of coursework and tutorial classes and/or research-based project in the curriculum)
- PLO 4 : formulate effective business strategies to manage various kinds of risk (by means of coursework and tutorial classes and/or research-based project in the curriculum)
- PLO 5 : communicate and collaborate with people effectively on issues related to actuarial science (by means of coursework and tutorial classes and/or research-based project in the curriculum)
- PLO 6 : discuss current actuarial issues and acquire and apply practical knowledge in some specially designed courses (by means of coursework and tutorial classes and/or research-based project in the curriculum)

Impermissible Combinations:

Minor in Actuarial Stu	dies	
Required courses	s (132 credits)	
1. Year I Courses		
Disciplinary Core	Courses (42 credits)	
ACCT1101	Introduction to financial accounting (6)	
ECON1210	Introductory microeconomics (6)	
ECON1220	Introductory macroeconomics (6)	
MATH1821	Mathematical methods for actuarial science I (6)	
MATH2822	Mathematical methods for actuarial science II (6)	
STAT2901	Probability and statistics: foundations of actuarial science (6)	
STAT2902	Financial mathematics (6)	
2. Year II Courses		
Disciplinary Core	Courses (42 credits)	
COMP1117	Computer programming (6)	
STAT3901	Life contingencies I (6)	
STAT3902	Statistical models (6)	
STAT3903	Stochastic models (6)	
STAT3904	Corporate finance for actuarial science (6)	
STAT3905	Introduction to financial derivatives (6)	
STAT3907	Linear models and forecasting (6)	
3. Year III Courses		
	Courses (30 credits)	
STAT3906	Risk theory I (6)	
STAT3908	Credibility theory and loss distributions (6)	
STAT3909	Life contingencies II (6)	
STAT3910	Financial economics I (6)	
STAT4904	Statistical learning for risk modelling (6)	
4. Year IV Courses		
Disciplinary Electi		
	ts selected from the following courses:	
STAT3911	Financial economics II (6)	
STAT3951	Topics on advanced actuarial modelling (6)	[previous title: Further topics in contingencies to new course name (6)]
STAT3953	Fundamentals of actuarial practice (6)	
STAT3954	Current topics in actuarial science (6)	
STAT3955	Survival analysis (6)	· · · · · · · · · · · ·
STAT3956	Life contingencies III (6)	[previous title: Pension funds and pension mathematics to new course name (6)]

STAT4607	Credit risk analysis (6)
STAT4608	Market risk analysis (6)
STAT4901	Risk theory II (6)
STAT4902	Selected topics in actuarial science (6)
STAT4903	Actuarial techniques for general insurance (6)
5. Capstone Require	ment (6 credits)
At least 6 credits se	elected from the following courses:
STAT4711	Capstone experience for actuarial science undergraduates (6)
STAT4767	Actuarial science internship (6)
STAT4798	Statistics and actuarial science project (6)

Notes:

1. Students are expected to be in full-time status for eight academic semesters (in addition to their 6-month or longer full-time internships) in order to fulfill the degree requirements.

2. Students may optionally take Majors or Minors outside the BSc(ActuarSc) programme, provided that they fully satisfy the requirements.

Remarks:

Programme Title	BSc in Actuarial Science
Offered to students	2018
admitted to Year 1 in	

The Actuarial Science curriculum aims at providing formal academic and professional training to students who wish to join the actuarial profession. Although actuarial science is a separate discipline with its own area of knowledge, modern actuarial training requires multidisciplinary knowledge such as probability, statistics, economics, investment, finance, law, taxation, and accounting. The Actuarial Science curriculum reflects this by incorporating various interdisciplinary courses into the basic actuarial training. The programme is set up to equip students with solid background in actuarial science, to develop their confidence and analytical skills to define and tackle problems in actuarial science and other related fields. Specifically, the programme is designed to provide adequate knowledge for students to sit for the early professional examinations organized by international actuarial organizations so that they can successfully join the actuarial profession after graduation. In addition, the programme provides enough academic training for students who wish to pursue postgraduate studies in actuarial science or other related areas.

Learning Outcomes:

By the end of this programme, students should be able to:

- PLO 1: understand and apply various analytic and quantitative methods to define and solve problems in insurance, finance, economics, investment, pension, financial risk management and demography (by means of coursework and tutorial classes and/or research-based project in the curriculum)
- PLO 2 : understand and identify the nature of insurance, finance and investment risks (by means of coursework and tutorial classes and/or research-based project in the curriculum)
- PLO 3 : develop analytical skills to evaluate and measure various kinds of risk, and appraise the related moral and ethical issues (by means of coursework and tutorial classes and/or research-based project in the curriculum)
- PLO 4 : formulate effective business strategies to manage various kinds of risk (by means of coursework and tutorial classes and/or research-based project in the curriculum)
- PLO 5 : communicate and collaborate with people effectively on issues related to actuarial science (by means of coursework and tutorial classes and/or research-based project in the curriculum)
- PLO 6 : discuss current actuarial issues and acquire and apply practical knowledge in some specially designed courses (by means of coursework and tutorial classes and/or research-based project in the curriculum)

Required courses	(132 credits)	
1. Year I Courses		
Disciplinary Core C	Courses (42 credits)	
ACCT1101	Introduction to financial accounting (6)	
ECON1210	Introductory microeconomics (6)	
ECON1220	Introductory macroeconomics (6)	
MATH1821	Mathematical methods for actuarial science I (6)	
MATH2822	Mathematical methods for actuarial science II (6)	
STAT2901	Probability and statistics: foundations of actuarial science (6)	
STAT2902	Financial mathematics (6)	
2. Year II Courses		
Disciplinary Core C	courses (42 credits)	
COMP1117	Computer programming (6)	
STAT3901	Life contingencies I (6)	
STAT3902	Statistical models (6)	
STAT3903	Stochastic models (6)	
STAT3904	Corporate finance for actuarial science (6)	
STAT3905	Introduction to financial derivatives (6)	
STAT3907	Linear models and forecasting (6)	
3. Year III Courses		
Disciplinary Core C	courses (30 credits)	
STAT3906	Risk theory I (6)	
STAT3908	Credibility theory and loss distributions (6)	
STAT3909	Life contingencies II (6)	
STAT3910	Financial economics I (6)	
STAT4904	Statistical learning for risk modelling (6)	
4. Year IV Courses		
Disciplinary Electiv		
	s selected from the following courses:	
STAT3911	Financial economics II (6)	
STAT3951	Topics on advanced actuarial modelling (6)	[previous title: Further topics in contingencies to new course name (6)]
STAT3953	Fundamentals of actuarial practice (6)	
STAT3954	Current topics in actuarial science (6)	
STAT3955	Survival analysis (6)	
STAT3956	Life contingencies III (6)	[previous title: Pension funds and pension mathematics to new course name (6)]

STAT4607	Credit risk analysis (6)
STAT4608	Market risk analysis (6)
STAT4901	Risk theory II (6)
STAT4902	Selected topics in actuarial science (6)
STAT4903	Actuarial techniques for general insurance (6)
5. Capstone Require	ment (6 credits)
At least 6 credits so	elected from the following courses:
STAT4711	Capstone experience for actuarial science undergraduates (6)
STAT4767	Actuarial science internship (6)
STAT/200	Statistics and actuarial science project (6)

STAT4798 Statistics and actuarial science project (6)

Notes:

1. Students are expected to be in full-time status for eight academic semesters (in addition to their 6-month or longer full-time internships) in order to fulfill the degree requirements.

2. Students may optionally take Majors or Minors outside the BSc(ActuarSc) programme, provided that they fully satisfy the requirements.

Remarks:

SECTION VI Course Descriptions

CAES1000	Core U	niversity English	n (6 credits)	Academic Year	2024		
Offering Department	English			Quota			
Course Co-ordinator	Dr A Yau	Dr A Yau, English <i>(aliceyhy@hku.hk)</i>					
eachers Involved	(Dr A Yau	(Dr A Yau,Centre for Applied English Studies)					
Course Objectives							
Course Contents	The Cor	e University Englis	h (CUE) course aims to enhand	ce first-year students' academi	c English langua		
Topics	proficiency in the university context. CUE focuses on developing students' academic English language skills f						
	Commor	Core Curriculum.	These include the language skil	Is needed to understand and p	roduce spoken a		
	written a	cademic texts, expr	ess academic ideas and concepts	clearly and in a well-structured	manner and sear		
	for and u	use academic sourc	es of information in their writing a	and speaking. Four online-learning	ng modules throug		
	the Moo	dle platform on aca	demic speaking, academic gram	mar, academic vocabulary, citat	ion and referenci		
			m will be offered to students to s				
	students	to participate more	effectively in their first-year unive	rsity studies in English, thereby	enriching their fire		
	year exp	erience.					
Course Learning	On succe	essful completion of	this course, students should be ab	ble to:			
Dutcomes	CLO 1 i	dentify and distingu	iish between main ideas and su	pporting details in lectures and	d written texts ar		
	c	lemonstrate an unde	erstanding of the arguments / facts	expressed			
	CLO 2 f	orm and express pe	rsonal opinions through critical rea	ding and listening			
	CLO 3 a	argue for and defend	a position in a clear and structure	ed way using academic sources,	through writing ar		
	s	speaking					
	CLO 4 c	emonstrate control	of grammatical accuracy and lexica	al appropriacy in academic comn	nunication		
Pre-requisites	NIL			· · · •			
and Co-requisites							
ind Impermissible							
combinations)							
Offer in 2024 - 2025	Y 1s	t sem 2nd sem (Offer in 2025 - 2026 : Y	Examination	No Exam		
Grade Descriptors	Α		ding result. Students are able to produc				
(A+ to F)	^	appropriately structur	red. Students can clearly and concisely	explain academic concepts and critica	lly argue for a detail		
(ways use appropriate academic sources				
			t all times. Students demonstrate an ability				
	texts. Written language contains very few, if any, systematic errors in grammar and vocabulary. Spoken language is always comprehensible and fluent.						
	B Good to very good result. Students are able to produce spoken and written academic texts which are appropriately structured						
		with only minor errors. Students can almost always clearly and concisely explain academic concepts and almost always critically					
		argue for a detailed position. Students almost always use appropriate academic sources to support their ideas in writing a speaking. They cite and reference correctly with only a few non-systematic errors. Students can comprehend and interpret tey with ease, although they may miss some implied meanings and opinions. Written language is mostly accurate but contains a fe					
		systematic errors in complex grammar and vocabulary. Spoken language is mostly comprehensible and fluent. Satisfactory to reasonably good result. Spoken and written academic texts produced by students are sometimes not-we					
	С						
		structured but there is some evidence of this ability. Students are sometimes unable to clearly and concisely explain academic concepts. While they can argue for a position, it is not very detailed and tend to be simplistic rather than critical. Students					
		sometimes use sources which are nonacademic and/or not appropriate to support their ideas in writing and speaking. There are					
		some systematic errors in citation and referencing but also evidence of correct systematic use. Students have some difficulty					
		comprehending and critically interpreting texts. They can always understand the main ideas but may miss some of the writer's					
		views and attitudes. Written language is sometimes inaccurate, although errors, when they occur, are more often in complex grammar and vocabulary and there is some evidence of control of simple grammatical structures. Spoken language is generally					
		comprehensible and fluent but at times places strain on the listener.					
	D	Barely satisfactory result. Spoken and written academic texts produced by students are often inappropriately structured but there					
	may be some evidence of this ability. Students are often unable to clearly and concisely explain academic concepts and argue for						
	a position. There is some evidence of an ability to explain academic concepts but not to critically argue for a position. Students often use sources which are nonacademic and/or not appropriate to support their ideas in writing and speaking. There are many						
	onten use sources which are nonacademic and/or not appropriate to support their loeas in writing and speaking. Inere are many systematic errors in citation and referencing however there is evidence of an understanding of some of the conventions of citation						
	and referencing. Students often have difficulty comprehending and interpreting texts, sometimes failing to understand the main						
		ideas and writer's views and attitudes. Written language is often inaccurate containing errors in a range of simple and complex grammar and vocabulary. Spoken language is only sometimes comprehensible and fluent, and strain is frequently placed on the					
		listener.	iary. Spoken language is only sometimes (comprehensione and indent, and strain is	nequentity placed on th		
	Fail						
	are unstructured and unclear. Students are unable to follow and interpret texts. There are language errors in almost every sentence. Spoken language is often incomprehensible. Assessments may not have been attempted or contain plagiarism.						
Communication	Y	sentence. Spoken lan	iguage is often incomprehensible. Assessm	ients may not have been attempted or co	main piagiarism.		
Communication- ntensive Course	T						
Course Type	Lecture	based course					
Course Teaching			Dotails				
Learning Activities	Activities		Details		No. of Hours		
Leanning Activities	Lectures				30		
	Tutorials				6		
	-	/ Self study			84		
Assessment Methods	Method	s	Details	Weighting in final	Assessment		
and Weighting				course grade (%)	Methods		
and trongining					to CLO Mappin		
	Assignm	nents	report	40			
	Assignm Essay	ients	report	40 30			

CAES9820	Academ	ic English for scie	ence students (6 credits)	Academic Yea	r 2024		
Offering Department	English Quota			Quota			
Course Co-ordinator	Mr A Wong	g (1st sem); Ms M Zee	e (2nd sem), English <i>(edubert@hku.l</i>	nk; melaniez@hku.hk)			
Teachers Involved		(Mr A Wong,Centre for Applied English Studies) (Ms M Zee,Centre for Applied English Studies)					
Course Objectives	This 6-cre skills for d science ar presenting spoken co	This 6-credit English-in-the-Discipline course aims to develop students' professional and technical communication skills for disciplinary studies in the sciences. There are three main components in the course: 1) Writing a popular science article 2) An oral presentation and 3) Independent language learning. Students will learn rhetorical skills for presenting and explaining scientific concepts to a cross-disciplinary and non-specialist audience in both written and spoken communication. Students will also be given an opportunity to design a personalised language learning plan, carry out the plan and reflect on their own independent language learning experience.					
Course Contents & Topics	Topics cov - Finding, e - Compiling - Contrasti - Writing fc - Organizi grammar; - Critically	Topics covered in the course will be: - Finding, evaluating and using appropriate academic source materials; - Compiling an academic bibliography; - Contrasting academic and popular genres of Science; - Writing for a specific audience, including stance, shared knowledge, levels of formality; and - Organizing and articulating ideas in an academically suitable format including appropriate vocabulary and grammar; and - Critically examine their own language proficiency and analyze how that relates to their ability to perform successfully within their discipline. Developing self-directed learning strategies.					
Course Learning	On succes	sful completion of thi	s course, students should be able to:				
Outcomes			disciplinary sources related to a spec				
	CLO 2 pro kn	oduce texts (written a owledge	nd spoken) appropriate for a cross-d	isciplinary audience based	l on their disciplinary		
	1	entify their own langua	age learning needs and implement a	plan to meet those needs			
Pre-requisites (and Co-requisites and Impermissible combinations)	NIL	IIL					
Offer in 2024 - 2025	Y 1st s	sem 2nd sem Offe	er in 2025 - 2026 : Y	Examination	No Exam		
Grade Descriptors	Α	Excellent result. Consiste	ently demonstrates ability to summarize salier	nt points accurately from approp	riate and reliable source		
(A+ to F) Communication-	organizational characteristics. Language learning needs are clearly identified and aligned with evidence of plann and reflection. B Good to very good result. Usually demonstrates ability to summarize salient points accurately using mostly orig Text mostly uses sources appropriately and demonstrates mostly accurate and appropriate grammatical organizational characteristics. Language learning needs are stated with some reference to evidence of planning although there is some misalignment between goals and self-study completed. C Satisfactory to reasonably good result. Demonstrates some ability to summarize salient points using mostly orig although some inaccuracies are present. Text uses some sources appropriately and demonstrates appropriate grammatical and lexical characteristics with some organizational flaws. Language learning needs are stated with evidence of planning and reflection but goals and self-study are misaligned. D Barely satisfactory result. Demonstrates alimited ability to summarize salient points from sources with inaccura organizational flaws. There is a minimal statement of language learning needs, planning and reflection with little alignment between goals and self-study. Fail Unsatisfactory result. Does not demonstrate ability to summarize salient points identify, interpret or appropriate reliable sources. Text uses no sources and demonstrates serious grammatical and/or organizational err demonstrate any meaningful attempt to identify language learning needs or implement a plan.				mostly original language grammatical, lexical and of planning and reflection mostly original language s appropriate but simple stated with some limited ith inaccuracies and little opriate lexical choices and with little or no apparent appropriately paraphrase		
intensive Course	Y						
Course Type	Lecture-ba	ased course					
Course Teaching	Activities		Details		No. of Hours		
& Learning Activities	Tutorials		seminars		36		
5		Self study	Schillidis		120		
	Assessme		independent learning work		84		
Assessment Methods and Weighting	Methods		Details	Weighting in final course grade (%)	Assessment Methods to CLO Mapping		
	Test			25			
	Assignments		independent learning work	20			
	Essay		other genres of writing	55			
Required/recommended reading and online materials		aterials to be provided	d electronically through course websit	le.			
Course Website	http://caes	.hku.hk/caes9820/					
Additional Course	This a compulsory course for all students studying undergraduate degrees in the Faculty of Science.						

Offering Department Course Co-ordinator eachers Involved Course Objectives	English Mr A Wor (Mr A Wo (Ms M Ze This 6-cr skills for report wr statistical communi genre-ba course. encourag and STAT	ng,Centre for Applied Engle e,Centre for Applied Engle edit English-in-the-Discipl disciplinary studies in sta iting, 2). professional ora data and trends, and just cation. This will be achie sed approach. Students	lish Studies) line course aims to develop student tistical sciences. There are two mai Il presentation. Students will learn ri stifying analyses and recommendati	s' professional and techn n components in the cou						
eachers Involved course Objectives course Contents	(Mr A Wo (Ms M Ze This 6-cro skills for report wr statistical communi genre-ba course. 3 encourag and STAT	ng,Centre for Applied Engle e,Centre for Applied Engle edit English-in-the-Discipl disciplinary studies in sta iting, 2). professional ora data and trends, and just cation. This will be achie sed approach. Students	glish Studies) lish Studies) line course aims to develop student titstical sciences. There are two mai al presentation. Students will learn ri stifying analyses and recommendati	s' professional and techn n components in the cou						
course Objectives	(Ms M Ze This 6-crr skills for report wr statistical communi genre-ba course. S encourag and STAT	ec,Centre for Applied Engl edit English-in-the-Discipl disciplinary studies in sta iting, 2). professional ora data and trends, and jus cation. This will be achie sed approach. Students	lish Studies) line course aims to develop student tistical sciences. There are two mai Il presentation. Students will learn ri stifying analyses and recommendati	n components in the cou						
ourse Contents	(Ms M Ze This 6-crr skills for report wr statistical communi genre-ba course. S encourag and STAT	ec,Centre for Applied Engl edit English-in-the-Discipl disciplinary studies in sta iting, 2). professional ora data and trends, and jus cation. This will be achie sed approach. Students	lish Studies) line course aims to develop student tistical sciences. There are two mai Il presentation. Students will learn ri stifying analyses and recommendati	n components in the cou						
course Contents	This 6-cro skills for report wr statistical communi genre-bas course. S encourag and STAT	edit English-in-the-Discipl disciplinary studies in sta iting, 2). professional ora data and trends, and jus cation. This will be achie sed approach. Students	line course aims to develop student titstical sciences. There are two mai al presentation. Students will learn re stifying analyses and recommendati	n components in the cou						
course Contents	skills for report wr statistical communi genre-bas course. S encourag and STAT	disciplinary studies in sta iting, 2). professional ora data and trends, and jus cation. This will be achie sed approach. Students	ntistical sciences. There are two main I presentation. Students will learn ristifying analyses and recommendation	n components in the cou						
	report wr statistical communi genre-bas course. S encourag and STAT	iting, 2). professional ora data and trends, and jus cation. This will be achie sed approach. Students	I presentation. Students will learn r stifying analyses and recommendati		rse: 1) Case stu					
	statistical communi genre-bas course. encourag and STAT	data and trends, and just cation. This will be achies sed approach. Students	stifying analyses and recommendation		skills for disciplinary studies in statistical sciences. There are two main components in the course: 1). Case study report writing, 2). professional oral presentation. Students will learn rhetorical skills for presenting and explaining					
	communi genre-bas course. encourag and STAT	cation. This will be achie sed approach. Students		statistical data and trends, and justifying analyses and recommendations convincingly in both written and spoken						
	genre-bas course. encourag and STAT	sed approach. Students	communication. This will be achieved through analysing samples of case study reports and presentations using a							
	course.		genre-based approach. Students of the BSc(Actuarial Science) and BASc(Applied AI) are required to take this							
	encourag and STAT									
	and STA	course. Students who intend to major in decision analytics, risk management, and statistics are strongly encouraged to take this course. Knowledge of linear statistical modelling, covered in courses such as STAT3600								
			but not assumed. Students majoring							
		are interested in broadening their computational skills acquired from their discipline to include effective communication in data analytics. Students from other science disciplines should take CAES9820.								
		e two main components in								
		study report writing								
		sional oral presentation								
	2.110100	sional oral presentation								
	Students	will learn rhetorical skills	for presenting and explaining mathe	ematical and statistical d	ata and trends a					
			ndations convincingly in both writte							
		5	es of case study reports and present	•						
ourse Learning			· · · · · · · · · · · · · · · · · · ·	ations doing a genie-base						
utcomes		•	ourse, students should be able to:	le using appropriate -t-	rical ekille					
ulcomes		•	matical and statistical data and trend	V 11 1						
		0	herent ideas with appropriate langu	age devices in a case s	ludy report and					
		ral presentation								
			mendations convincingly in a case s							
		, , , , , , , , , , , , , , , , , , , ,	ge learning needs, develop indeper	5 5	to address the					
		eeds, and reflect on their	own independent language learning	experience						
re-requisites	NIL									
and Co-requisites										
nd Impermissible										
ombinations)										
offer in 2024 - 2025	Y 1st	t sem 2nd sem Offer i	n 2025 - 2026 : Y	Examination	No Exam					
rade Descriptors	Α		ve skills displaying a complete awareness of							
(A+ to F)	^		critically analyse a case scenario, convincing							
(A: 101)		data limitations when relevan	nt. Students are able to successfully evaluate	e their language performance ir	n all areas and prop					
			language learning plans. Spoken language		uent. Written langu					
	В		ge of grammar and vocabulary, with very few s ive skills displaying good awareness of a		ro although thora					
	В		Students are able to analyse a case scenari							
		data limitations when relevant. Students are able to evaluate their language performance in most areas and propose re future language learning plans. Spoken language is comprehensible and fluent. Written language contains a good rar								
	-		aking some systematic errors of language whi							
	С		lly appropriate for the intended audience. The							
		successfully. Purposes are generally clear and tone is generally suitable. Students are generally able to analyse a case scenario and make recommendations, but the analysis and recommendations need more justification. Students are able to evaluate their								
		and make recommendations, but the analysis and recommendations need more justification. Students are able to evaluate their language performance in a limited number of areas and proposed future language learning plans are rather vague. Spoken								
		language is generally comprehensible and fluent. Written language contains inaccuracies when complex grammar and								
		vocabulary are used. Productive skills display weaknesses in awareness of purpose and audience. Tone is at times unsuitable. Students superficially								
	D									
			nd the analyses and recommendations are w be lacking. Students are able to evaluate t							
		proposed future language lea	arning plans may not be relevant. Written lang	uage contains frequent errors ir	n complex grammar					
		vocabulary, but the written w	ork can still be followed by a patient and sym	pathetic audience. Spoken lang	uage is comprehens					
			at times placed on the listener.	4- h						
	Fail		or no awareness of audience or are too limited scenario and make reasonable recommenda							
			aluate their language performance and propo							
		language errors in both sim	ple and complex grammar in written work, v	vhich impede successful comp	rehension of ideas					
	points. Spoken language places considerable strain on the listener throughout. Assessments may not have been attempted									
	V	contain plagiarism.								
ommunication-	Y									
tensive Course	1									
ourse Type		ased course								
ourse Teaching	Activitie		Details		No. of Hours					
Learning Activities	Lectures		seminars		30					
	Tutorials		small group tutorials		6					
	Reading / Self study				120					
	Assessm		independent learning work		84					
ssessment Methods	Methods		Details	Weighting in final	Assessment					
nd Weighting	methous	,	Soluiis	course grade (%)	Methods					
				course grade (%)						
	Ancier	anta		40	to CLO Mappin					
	Assignm			40						
	Project re	•		30						
	Presenta	ition		30						
dditional Course	Students	of the BSc (Actuarial Scie	ence) and BASc(Applied AI) are requ	ired to take this course. S	Students who inte					
formation			thematics, risk management, and st							

CSCI9001	Practica	I Chinese for scien	ce students (6 credits)	Academic Yea	r 2024		
Offering Department	Chinese		· · · · · · · · · · · · · · · · · · ·	Quota			
Course Co-ordinator	Dr H F Po						
Teachers Involved	(Dr K T La (Dr S F Le	Dr C M Chan,Chinese) Dr K T Lam,Chinese) Dr S F Lee,Chinese) Mr K W Wong,Chinese)					
Course Objectives	students announce	his course aims to enhance the students' competence using Chinese for professional communication. It helps the tudents to master the techniques of writing different types of documents such as memos, emails, letters, nnouncements, notice, brochures, leaflets, and reports. In addition, topics addressing resentation and discussion echniques, the style and rhetoric of reader-based writings are included to heighten the students' linguistic ensitivity.					
Course Contents & Topics	good-news electronic	Grammar & vocabulary of modern Chinese - The Chinese writing system - Techniques of writing short messages: good-news and goodwill messages, bad-news messages, and persuasive messages - Techniques of writing electronic documents: emails; presentations - Styles and rhetoric of reader-based reports, proposals and presentations					
Course Learning Outcomes		In successful completion of this course, students should be able to:					
Jucomes			etency in modern Chinese and write		r discipling		
	CLO 3 ex CLO 4 ap	CLO 2 employ rhetorical devices and stylistics, as well as practical writing skills specific to their discipline CLO 3 explore new tactics of communication, initiate discussions and debates and address new challenges CLO 4 apply their disciplinary knowledge and their Chinese writing skills and professional presentation techni analytically, critically and creatively in different social or professional discourses					
Pre-requisites (and Co-requisites and Impermissible combinations)	NIL						
Offer in 2024 - 2025	Y 1st	sem 2nd sem Offer	in 2025 - 2026 : Y	Examination	Dec May		
Grade Descriptors	Α		perb ability to achieve the intended learning		vels of learning: describe		
(A+ to F)	В						
	 evaluate, and synthesize the language techniques for effective communication in most situations. C The student acquired adequate ability to achieve the intended learning outcomes of the course at low levels of learning (i.e. describe and apply the language techniques for effective communication) but not at high levels of learning (i.e. evaluate and synthesize the language techniques for effective communication). 						
	D	The student only has basic familiarity with the subject.					
-	Fail	The student has very limited	d familiarity with the subject.				
Communication- intensive Course	Y						
Course Type	Lecture-ba	ased course					
Course Teaching	Activities	6	Details		No. of Hours		
& Learning Activities	Lectures				12		
	Tutorials		Small group tutorials		12		
	Group wo		Workshops		24 24		
	Discussio	Self study	Reading/self study (20 hours) and preparation (12 hours)		32		
	Assessme	,	reading/sell study (20 hours) and preparation (12 hours)		16		
Assessment Methods and Weighting	Methods		Details	Weighting in final course grade (%)	Assessment Methods to CLO Mapping		
	Assignme	ents	coursework	50			
	Examination 50						
Required/recommended reading and online materials	香港大學出 复,1996: 館。 汪麗 篇》。香港	Examination 50 王麗炎,1998年。《漢語修辭》。上海:上海大學出版社。 李家樹、謝耀基,1994年。《漢語的特性和運用》。香港: 香港大學出版社。 香港城市大學語文學部,2001年。《中文傳意:基礎篇》。香港:香港城市大學出版社。 周錫韋 夏,1996年。《中文應用寫作教程》。香港:三聯書店。 李錦昌,2000年。《現代商業傳意大全》。香港:商務印書 官。 汪麗炎,1998年。《漢語寫作》。上海:上海大學出版社。 香港城市大學語文學部,2001年。《中文傳意:寫作 篇》。香港:香港城市大學出版社。 經文略、蘭德主編,2001年。《企業文案撰寫模式大全》。廣州:廣東經濟出版 士。 劉美森,2001年。《新編公文寫作學》。成都:四川人民出版社。 黎運漢、李軍,2001年。《商業語言》。台北:					

MATH1821	Mathema	atical methods	for actuarial science I (6 cred	its) Academic Yea	ar 2024		
Offering Department	Mathemat	ics		Quota			
Course Co-ordinator	Dr K H Lav	w, Mathematics (la	awkaho@connect.hku.hk)				
Teachers Involved	(Dr K H La	aw,Mathematics)					
Course Objectives	backgroun single vari	nd of calculus of o	e two mathematics courses designed ne and several variables and an intr elementary matrix theory. It aims at ule 2 background.	oduction to linear algebra. Th	ne course focuses o		
Course Contents & Topics	- Function	s; graphs; inverse ontinuity and differ	functions.				
	- Mean va - Bisection - Higher or - Taylor ap - Improper - Numerica - Basic ma	 Mean value theorem; implicit differentiation; L'Hopital's rule. Bisection method and Newton's method. Higher order derivatives, maxima and minima, graph sketching. Taylor approximation and error estimation. Improper integrals, partial fractions, integration by parts. Numerical integration, Trapezoidal rule and Simpson's rule. Basic matrix and vector (of orders 2 and 3) operations, determinants. Simple differential equations. 					
Course Learning		•		to:			
Outcomes	CLO 1 de CLO 2 ev CLO 3 ap sk CLO 4 ap	On successful completion of this course, students should be able to: CLO 1 describe properties of a function and an inverse function CLO 2 evaluate various kinds of limits, and determine continuity and differentiability of functions CLO 3 apply advanced rules/techniques of differentiation and integration to compute derivatives and integral sketch graphs of functions CLO 4 approximate integrals by numerical methods CLO 5 perform matrix and vector operations, compute determinants					
	CLO 6 so	lve simple first and	d second order ordinary differential e	quations			
Pre-requisites (and Co-requisites and Impermissible combinations)	2, or equiv						
Offer in 2024 - 2025		sem Offer in 202	5	Examination	Dec		
Grade Descriptors (A+ to F)	A B C D	 applications through correctly analysing problems, clearly and elegantly presenting correct logical reasoning and argumentatio and being able to carry out computations carefully and correctly, and with some innovative approaches to solving problems. Demonstrate a good understanding of key concepts and ideas by being able to identify the appropriate theorems and the applications through correctly analysing problems, but with some minor inadequacies in arguments, identifying the appropriat theorems or their applications and presentation or with some minor computational errors. Demonstrate an acceptable understanding of key concepts and ideas by being able to correctly identify appropriate theorems but with some minor computational errors. Demonstrate an acceptable understanding of key concepts and ideas by being able to correctly identify appropriate theorems but with some inadequacies in applying the theorems through incorrectly analysing problems with poor argument an presentation or a number of minor computational errors. 					
	Fail	substantial inadequacies in applying the theorems through incorrectly analysing problems with poor arguments with substantial computational errors. Demonstrate poor and inadequate understanding by not being able to identify appropriate theorems or the being able to complete the solution.			· ·		
Communication- intensive Course	N	peing able to comple	เข แกะ รอเนนอก.				
Course Type	Lecture-ba	ased course					
Course Teaching	Activities	;	Details	Details			
& Learning Activities	Lectures						
	Tutorials				12		
	Reading /	Self study	Students are expected to classes.	watch videos online before	100		
Assessment Methods and Weighting	Methods		Details	Weighting in final course grade (%)	Assessment Methods to CLO Mapping CLO 1, 2, 3, 4, 5,		
	Examinati	ion		50	6		
	Test		Tutoriala	40	CLO 1, 2, 3, 4, 5, 6		
	Assignme		Tutorials, assignme participation, etc.	10	CLO 1, 2, 3, 4, 5, 6		
Required/recommended reading and online materials	edition)		rised by Maurice D. Weir and Joel Elementary Linear Algebra A Matrix	·	ddison Wesley, 12tl		
Course Website		dle.hku.hk/					

MATH2822	Mathem	atical methods for a	actuarial science II (6 credits)	Academic Year	2024		
Offering Department	Mathemat	tics		Quota			
Course Co-ordinator	Dr K H La	w, Mathematics (lawkah	o@connect.hku.hk)				
Teachers Involved		aw,Mathematics)					
Course Objectives	solid back on multiva	ground of calculus of or	two mathematics courses designed a and several variables and an intro ar algebra. It aims at students with M	duction to linear algebra.	The course focuse		
Course Contents & Topics	- Gradient - Taylor ap - Maxima - Double a - Matrices - Vector s	is of several variables; p ts and directional derivat oproximation. and minima; Lagrange r and triple integrals, areas , systems of linear equa paces and subspaces. lues and eigenvectors, d	ives. nultipliers. s and volumes.				
Course Learning			course, students should be able to:				
Outcomes	de ar CLO 2 ur th	 CLO 1 understand and recognize various topics in linear algebra such as the basic arithmetic of matrices determinants, systems of linear equations, eigenvalues and eigenvectors, diagonalizable matrices, basis and dimension, and the rank-nullity theorem CLO 2 understand and recognize various topics in functions of several variables including partial differentiation the Hessian test for local extrema, vector-valued functions, Jacobians, the method of Lagrange multipliers double/triple integrals and the change of variable formula 					
Pre-requisites (and Co-requisites and Impermissible combinations)		Pass in MATH1821. For BSc(ActuarSc) students only.					
Offer in 2024 - 2025	Y 2nd	sem Offer in 2025 - 2	026 : Y	Examination	May		
Grade Descriptors (A+ to F)	A B C	 applications through correctly analysing problems, clearly and elegantly presenting correct logical reasoning and argumentation and being able to carry out computations carefully and correctly, and with some innovative approaches to solving problems. B Demonstrate a good understanding of key concepts and ideas by being able to identify the appropriate theorems and their applications through correctly analysing problems, but with some minor inadequacies in arguments, identifying the appropriate theorems or their applications and presentation or with some minor computational errors. 					
	D	Demonstrate some understanding of key concepts and ideas by being able to correctly identify appropriate theorems, bu substantial inadequacies in applying the theorems through incorrectly analysing problems with poor argument or presental with substantial computational errors.					
	Fail	Demonstrate poor and inad being able to complete the s		dentify appropriate theorems or	their applications, or no		
Communication- intensive Course	N	g					
Course Type	Lecture-ba	ased course					
Course Teaching	Activities	S	Details		No. of Hours		
& Learning Activities	Lectures				36		
	Tutorials				12		
	Reading	/ Self study	Students are expected to watch videos online before classes.		100		
Assessment Methods and Weighting	Methods		Details	Weighting in final course grade (%)	Assessment Methods to CLO Mapping		
	Examinat	ion		50	CLO 1, 2		
	Test Assignme	ents		40 10	CLO 1, 2 CLO 1, 2		
Required/recommended	•		by Maurice D. Weir and Joel Has				
reading and online materials	edition)		ntary Linear Algebra A Matrix Appr	, , , , , , , , , , , , , , , , , , ,	1201 110010y, 120		

STAT2901	Probabil credits)	•					
Offering Department	Statistics &	Actuarial Science		Quota			
Course Co-ordinator	Prof S M S	Lee, Statistics & Actua	rial Science (smslee@hku.hk)				
Teachers Involved	(Prof S M S	S Lee, Statistics & Actua	rial Science)				
Course Objectives	quantitativ	ely assessing risk. Appli	 develop knowledge of the fundations of these tools to actuarial so probability topics and the supporting 	cience problems will be er			
Course Contents & Topics	 Basic ele Mutually Addition a Independ Combina Condition Bayes the Random Univaria uniform, e distribution 	ate probability distributio xponential, chi-square, 1	ctations bability ons (including binomial, negative b beta, Pareto, lognormal, gamma				
	- Cumulati - Mode, me - Variance - Central li	- Probability functions and probability density functions - Cumulative distribution functions - Mode, median, percentiles and moments - Variance and measures of dispersion - Central limit theorem 3. Sampling distributions and introduction of estimation					
Course Learning			ourse, students should be able to:				
Outcomes	CLO 1 I	understand the mathem	atical theory underlying the modern	practice of statistics			
	CLO 2	develop skills in probabi	listic analysis for problems involving	randomness			
	CLO 3	apply techniques in prot	pability and statistics to solve actuar	ial science problems			
Pre-requisites	Pass in MA	ATH1821 Ifor BSc(Actua	arSc) students] or already enrolled ir	this course. or			
(and Co-requisites			olled in this course [for students out		rogrammel: and		
and Impermissible			sed or enrolled in any of these				
combinations)	STAT2601		·····, ·····		,		
Offer in 2024 - 2025		sem Offer in 2025 - 2	026 · Y	Examination	May		
Grade Descriptors	A						
(A+ to F)		learning outcomes. Show strong analytical and critical abilities and logical thinking, with evidence of original thought, and ability to apply knowledge to a wide range of complex, familiar and unfamiliar situations. Apply highly effective organizational and presentational skills.					
	B Demonstrate substantial command of a broad range of knowledge and skills required for attaining at least most of the course learning outcomes. Show evidence of analytical and critical abilities and logical thinking, and ability to apply knowledge to familiar and some unfamiliar situations. Apply effective organizational and presentational skills.						
	C Demonstrate general but incomplete command of knowledge and skills required for attaining most of the course learning outcomes. Show evidence of some analytical and critical abilities and logical thinking, and ability to apply knowledge to most familiar situations. Apply moderately effective organizational and presentational skills.						
	D						
	Fail						
Communication- intensive Course	N						
Course Type		ised course					
Course Teaching	Activities		Details		No. of Hours		
& Learning Activities	Lectures				36		
	Tutorials	<u> </u>	tutorials/example classes		12		
	-	Self study			100		
Assessment Methods and Weighting	Methods		Details	Weighting in final course grade (%)	Assessment Methods to CLO Mapping		
	Examinati	on	One 3-hour written examination	75	CLO 1, 2, 3		
	Assignme	nts	Coursework (assignments, tutorials, and a class test)	25	CLO 1, 2, 3		
Required/recommended reading and online materials	Hassett, M Hogg, R.V River.	. and Stewart, D. (2006 . and Tanis, E.A. (2009	o Probability Theory and Its Applica). Probability for Risk Management). Probability and Statistical Inferent in Probability (7th Edition). Prentice	(2nd Edition). ACTEX Pub ice (8th Edition). Prentice	Hall: Upper Saddl		
	Wackerly,		d Scheaffer, R. (2008). Mathemati				

STAT2902	Financial mathematics (6 credits)	Academic Year	2024
Offering Department	Statistics & Actuarial Science	Quota	
Course Co-ordinator	Prof K C Cheung, Statistics & Actuarial Science (kccg@hku.hk)		
Teachers Involved	(Prof K C Cheung, Statistics & Actuarial Science)		
Course Objectives	This course introduces the fundamental concepts of financial mathematics we development of basic actuarial techniques. Practical applications of these conc		
Course Contents & Topics	Key topics include: measurement of interest, annuities certain; discounter amortization schedules and sinking funds; bonds and related securities; pract		

Department of Statistics & Actuarial Science

		and short sales; stoch	duration, convexity, and immunizatio		alysis such as yiel	
Course Learning			ourse, students should be able to:			
Dutcomes	CLO 1	· · · · · · · · · · · · · · · · · · ·	epts of financial mathematics			
	CLO 2		ate elementary financial problems			
	CLO 3		st theory to tackle some practical fina			
	CLO 4		of the term structure of interest rate			
	CLO 5		of simple stochastic models for inve	estment returns		
Pre-requisites and Co-requisites and Impermissible combinations)	Not for stu		in STAT3615, or already enrolled in			
Offer in 2024 - 2025		sem Offer in 2025 - 2		Examination	May	
Grade Descriptors (A+ to F)	A	learning outcomes. Show str apply knowledge to a wide presentational skills.	tery at an advanced level of extensive kno ong analytical and critical abilities and logical e range of complex, familiar and unfamilia mmand of a broad range of knowledge and	thinking, with evidence of origir r situations. Apply highly effect	al thought, and ability t tive organizational an	
	C	learning outcomes. Show ev and some unfamiliar situatio Demonstrate general but in	idence of analytical and critical abilities and I ns. Apply effective organizational and presen ncomplete command of knowledge and ski of some analytical and critical abilities and I	ogical thinking, and ability to ap tational skills. Ils required for attaining most	oly knowledge to familia of the course learnin	
	D	familiar situations. Apply mo Demonstrate partial but limi	derately effective organizational and presenta ted command of knowledge and skills requir	itional skills. ed for attaining some of the co	urse learning outcomes	
	Fail	Show evidence of some coherent and logical thinking, but with limited analytical and critical abilities. Show limited ability to apply knowledge to solve problems. Apply limited or barely effective organizational and presentational skills. Demonstrate little or no evidence of command of knowledge and skills required for attaining the course learning outcomes. Lack				
		of analytical and critical abili	ties, logical and coherent thinking. Show very	little or no ability to apply know		
Communication- Intensive Course	N		onal skills are minimally effective or ineffective	2.		
Course Type	Lecture-h	ased course				
Course Teaching	Activities		Details		No. of Hours	
& Learning Activities	Lectures	-			36	
	Tutorials	/ Colf atudy	tutorials/example classes		12	
Assessment Methods	Ū	/ Self study	Detelle	Malahtina in final	100	
and Weighting	Methods		Details	Weighting in final course grade (%)	Assessment Methods to CLO Mapping	
	Examinat	ion	One 3-hour written examination Coursework (assignments,	60	CLO 1, 2, 3, 4, 5	
	Assignme	ents	tutorials, class test(s) and participation)	40	CLO 1, 2, 3, 4, 5	
Required/recommended	Kellison, S	S. G.: The Theory of Inte	rest (Irwin: Illinois, 2008, 3rd edition)		1	
reading and online materials	Broverma 2004, 3rd		f Investment and Credit (ACTEX P	ublications - Mad River I	Books: Connecticu	
Course Website		odle.hku.hk				
			4. \	A an damia Vara		
STAT3901		tingencies I (6 credi	ts)	Academic Year	2024	
Offering Department		& Actuarial Science		Quota		
Course Co-ordinator			Science (watkp@hku.hk)			
Teachers Involved Course Objectives		at,Statistics & Actuarial	e are to integrate life contingencies	into a full probabilistic fra	mework The time	
	until-death financial in contingen	n random variable is the mpact of the random eve cies and the basic mathe	basic building block by which mode ent of untimely death, are developed ematical skills for modelling life insur	els for life insurances, des I. This course introduces ance products.	igned to reduce th the concepts of li	
Course Contents & Topics			outions; life table functions; select a om variable; benefit premiums.	na ultimate tables; life ins	surance models; li	
Course Learning						
Outcomes	On successful completion of this course, students should be able to: CLO 1 calculate the expected values, variances, probabilities, and percentiles for survival-time random variable that arises from the discrete survival-time					
	va		nptions for fractional ages			
	va CLO 3 de CLO 4 de va	efine present-value-of-be ofine and calculate the e ariables, present-value-o	nptions for fractional ages nefit random variables defined on su expected values, variances and prol f-loss-at-issue random variables, and	urvival-time random variat pabilities for present-value	oles e-of-benefit randor	
and Co-requisites and Impermissible	CLO 3 de CLO 4 de CLO 5 ca (Pass in S (Pass in S	efine present-value-of-be efine and calculate the e ariables, present-value-o alculate benefit premiums STAT2602 and STAT3615	nptions for fractional ages nefit random variables defined on su expected values, variances and prol f-loss-at-issue random variables, and s for life insurances and annuities 5) or TAT3902 or already enrolled in this	urvival-time random variat pabilities for present-value d present-value-of-loss ra	oles e-of-benefit randor	
and Co-requisites and Impermissible combinations)	CLO 3 de CLO 4 de Va CLO 5 ca (Pass in S (Pass in S (Pass in S	efine present-value-of-be efine and calculate the e ariables, present-value-o alculate benefit premiums STAT2602 and STAT3615 STAT2902 and (Pass in S	nptions for fractional ages nefit random variables defined on su expected values, variances and prol f-loss-at-issue random variables, and s for life insurances and annuities 5) or STAT3902 or already enrolled in this 2)	urvival-time random variat pabilities for present-value d present-value-of-loss ra	oles e-of-benefit randor	
and Co-requisites and Impermissible combinations) Offer in 2024 - 2025	CLO 3 de CLO 4 de Va CLO 5 ca (Pass in S (Pass in S (Pass in S	efine present-value-of-bee efine and calculate the e ariables, present-value-o alculate benefit premiums STAT2602 and STAT3615 STAT2902 and (Pass in S STAT2602 and STAT2902 sem Offer in 2025 - 20 Demonstrate thorough mas learning outcomes. Show st apply knowledge to a widd	nptions for fractional ages nefit random variables defined on su expected values, variances and prol f-loss-at-issue random variables, and s for life insurances and annuities 5) or STAT3902 or already enrolled in this 2)	urvival-time random variat pabilities for present-value d present-value-of-loss ra course)) or Examination wledge and skills required for thinking, with evidence of origin	bles e-of-benefit randor ndom variables Dec attaining all the cours al thought, and ability	
Pre-requisites (and Co-requisites and Impermissible combinations) Offer in 2024 - 2025 Grade Descriptors (A+ to F)	CLO 3 de CLO 4 de Va CLO 5 ca (Pass in S (Pass in S (Pass in S (Pass in S	efine present-value-of-bee efine and calculate the e ariables, present-value-o alculate benefit premiums STAT2602 and STAT3615 STAT2902 and (Pass in S STAT2602 and STAT2902 sem Offer in 2025 - 20 Demonstrate thorough mas learning outcomes. Show st apply knowledge to a wide presentational skills. Demonstrate substantial co learning outcomes. Show ev	nptions for fractional ages nefit random variables defined on su expected values, variances and prol f-loss-at-issue random variables, and s for life insurances and annuities b) or TAT3902 or already enrolled in this 2) 126 : Y tery at an advanced level of extensive kno orong analytical and critical abilities and logical e range of complex, familiar and unfamilia mmand of a broad range of knowledge and idence of analytical and critical abilities and logical	urvival-time random variat pabilities for present-value d present-value-of-loss ra course)) or Examination wledge and skills required for thinking, with evidence of origin r situations. Apply highly effect skills required for attaining at I ogical thinking, and ability to app	Dec attaining all the cours attaining all the cours all thought, and ability t	
(and Co-requisites and Impermissible combinations) Offer in 2024 - 2025 Grade Descriptors	CLO 3 de CLO 4 de Va CLO 5 ca (Pass in S (Pass in S (Pass in S Y 1st A	efine present-value-of-bee efine and calculate the e ariables, present-value-o alculate benefit premiums STAT2602 and STAT3615 STAT2902 and (Pass in S STAT2902 and (Pass in S STAT2602 and STAT2902 sem Offer in 2025 - 20 Demonstrate thorough mas learning outcomes. Show st apply knowledge to a wide presentational skills. Demonstrate substantial con learning outcomes. Show evidence outcomes. Show evidence	nptions for fractional ages nefit random variables defined on su expected values, variances and prof f-loss-at-issue random variables, and s for life insurances and annuities 5) or STAT3902 or already enrolled in this 2) 126 : Y tery at an advanced level of extensive kno ong analytical and critical abilities and logical e range of complex, familiar and unfamilia mmand of a broad range of knowledge and	urvival-time random variat babilities for present-value d present-value-of-loss ra course)) or Examination wledge and skills required for thinking, with evidence of origir r situations. Apply highly effect skills required for attaining at I ogical thinking, and ability to ap tational skills. Ils required for attaining most ogical thinking, and ability to ap	Dec attaining all the cours attaining all the cours attought, and ability to tive organizational an east most of the cours by knowledge to familia of the course learnin	

	Fail	of analytical and critical	evidence of command of knowledge and skills re abilities, logical and coherent thinking. Show very atational skills are minimally effective or ineffectiv	/ little or no ability to apply kno		
Communication-	N	Organization and preser	itational skills are minimally ellective of mellectiv	e		
ntensive Course						
Course Type	Lecture-ba	ased course				
Course Teaching	Activities	S	Details		No. of Hours	
& Learning Activities	Lectures					
	Tutorials Reading / Self study				12	
	Reading /	/ Self study			100	
Assessment Methods and Weighting	Methods		Details	Weighting in final course grade (%)	Assessment Methods to CLO Mapping	
	Examinat	tion	One 3-hour written examination	60	CLO 1, 2, 3, 4, 5	
	Assignme	ents	Coursework (assignments, tutorials, class test(s) and participation)	40	CLO 1, 2, 3, 4, 5	
Required/recommended reading and online materials	Edition). T Dickson, I Edition). C	bitt, C. J. (1997). Actuar I Mathematics for Life (,			
Course Website	nttp://moo	odle.hku.hk				
CTAT2000	04-41-41	al mad-l- (0	(i4-)	A and such Me		
STAT3902		al models (6 cred	lits)	Academic Yea		
Offering Department	Statistics					
Course Co-ordinator			ial Science (mhofert@hku.hk)			
Feachers Involved	·	ert,Statistics & Actuar	/			
Course Objectives	including	probabilistic modellin	us introduction to fundamental concep g, limiting results, estimation and hypo course by the Society of Actuaries (SO	thesis testing. It is an a		
Course Contents			, distribution and quantile functions, co		matrices. strong la	
& Topics	of large (maximum difference	numbers, central lin n likelihood, method	it theorem, estimators and their (as of moments), (asymptotic) confidence rmals, ratio of means of two normals)	symptotic) properties, p intervals (mean and v	arametric estimato ariance of a norma	
Course Learning			is course, students should be able to:			
Dutcomes			mentals of probability			
			cepts in mathematical statistics			
			pts of point estimation, interval estimat	ion and hypothesis testir	na	
		apply the learned con			ig	
		TAT2901; and	Cepto			
Pre-requisites			ad in STAT2602, as already annullad in	this sources and		
and Co-requisites and Impermissible combinations)		Actuarial Science) stu	sed in STAT2602, or already enrolled in dents only.	this course, and		
Offer in 2024 - 2025	Y 1st	sem Offer in 2025 ·	- 2026 : Y	Examination	Dec	
Grade Descriptors (A+ to F)	A B C	learning outcomes. Show apply knowledge to a presentational skills. Demonstrate substantia learning outcomes. Show and some unfamiliar situ Demonstrate general b outcomes. Show evider familiar situations. Apply	mastery at an advanced level of extensive know w strong analytical and critical abilities and logical wide range of complex, familiar and unfamilia l command of a broad range of knowledge and w evidence of analytical and critical abilities and ations. Apply effective organizational and presen ut incomplete command of knowledge and sk ice of some analytical and critical abilities and moderately effective organizational and present limited command of knowledge and skills requi	I thinking, with evidence of orig r situations. Apply highly eff skills required for attaining a ogical thinking, and ability to a tational skills. ills required for attaining mo logical thinking, and ability to ational skills.	jinal thought, and ability t ective organizational an t least most of the cours pply knowledge to familia st of the course learnin apply knowledge to mos	
	Fail	knowledge to solve prob Demonstrate little or no	coherent and logical thinking, but with limited ar lems. Apply limited or barely effective organizatio evidence of command of knowledge and skills re	onal and presentational skills. equired for attaining the course	e learning outcomes. La	
Communication-	N		abilities, logical and coherent thinking. Show ven tational skills are minimally effective or ineffectiv		wledge to solve problem	
ntensive Course	Lochur- /					
Course Type		ased course	D. (alla		NI. 612	
Course Teaching	Activities	S	Details		No. of Hours	
Learning Activities	Lectures				36	
	Tutorials				12	
	Reading /	/ Self study			100	
ssessment Methods nd Weighting	Methods		Details	Weighting in final course grade (%)	Assessment Methods to CLO Mapping	
	Examinat	tion	One 2-hour written examination	60	CLO 1, 2, 3, 4	
			Coursework (assignments,	40		
Required/recommended eading and online materials	Assignme Casella G		tutorials, and a class test) stical Inference, 2nd edition, Duxbury, 2	40	CLO 1, 2, 3, 4	
Course Website	http://moo	dle.hku.hk				
STAT3903	Stochas	stic models (6 cre	dits)	Academic Yea	ar 2024	

STAT3903	Stochastic models (6 credits)	Academic Year	2024
Offering Department	Statistics & Actuarial Science	Quota	

Course Co-ordinator	Prof K Zhu, Statistics & Actuarial Science (mazhuke@hku.hk)					
Teachers Involved	(Prof K Zhu, Statistics & Actuarial Science) This is an introductory course in stochastic processes. It will cover the basic concepts of the theory of stochastic					
Course Objectives		s and explore differ	e in stochastic processes. It will cover t rent types of stochastic processes inclu			
Course Contents	Introductio	on to probability th	eory, conditional probability and expect			
& Topics	states, Po Brownian formula, (bisson process, dist Motion, hitting time	Markov chain, calculation of limiting pr ribution of inter-arrival time and waiting ti and maximum variable, geometric Brow nd stationary processes. Birth-and-dea (if time permits)	me, conditional distribution nian motion, the Black-Sc	n of the arrival time holes option pricing	
Course Learning			this course, students should be able to:			
Outcomes	CLO 2	understand the esse	ng method to calculate the mean and pro entials of Markov chains, the Poisson pro chastic models can be applied to the stu	cess, and Brownian motio	n	
Pre-requisites	11	TAT2901; and	chastic models can be applied to the stu	dy of real-life prichomena		
(and Co-requisites and Impermissible combinations)	Not for stu Not for stu	udents who have pa	ssed in MATH3603, or have already enro issed in STAT3603, or have already enro tudents only.			
Offer in 2024 - 2025	,	d sem Offer in 202	•	Examination	May	
Grade Descriptors (A+ to F)	A	learning outcomes. Show strong analytical and critical abilities and logical thinking, with evidence apply knowledge to a wide range of complex, familiar and unfamiliar situations. Apply high presentational skills. B Demonstrate substantial command of a broad range of knowledge and skills required for attain				
	C	learning outcomes. Sh and some unfamiliar s Demonstrate general	now evidence of analytical and critical abilities and ituations. Apply effective organizational and preser but incomplete command of knowledge and sk	logical thinking, and ability to app itational skills. .ills required for attaining most	ly knowledge to familiar of the course learning	
	D	outcomes. Show evidence of some analytical and critical abilities and logical thinking, and ability to apply knowledge to most familiar situations. Apply moderately effective organizational and presentational skills. Demonstrate partial but limited command of knowledge and skills required for attaining some of the course learning outcomes. Show evidence of some coherent and logical thinking, but with limited analytical and critical abilities. Show limited ability to apply				
	Fail	knowledge to solve problems. Apply limited or barely effective organizational and presentational skills. Fail Demonstrate little or no evidence of command of knowledge and skills required for attaining the course learning outcomes. La of analytical and critical abilities, logical and coherent thinking. Show very little or no ability to apply knowledge to solve problem				
Communication-	N	Organization and pres	entational skills are minimally effective or ineffectiv	е.		
intensive Course	IN					
Course Type	Lecture-ba	ased course				
Course Teaching	Activities		Details		No. of Hours	
& Learning Activities	Lectures				36	
	Tutorials	/ Solf study			12 100	
Assessment Methods	Methods	/ Self study	Details	Weighting in final	Assessment	
and Weighting	Methous		Details	course grade (%)	Methods to CLO Mapping	
	Examinat	tion	One 3-hour written examination	75	CLO 1, 2, 3	
	Assignme	ents	Coursework (assignments, tutorials, and a class test)	25	CLO 1, 2, 3	
reading and	S. M. Ros	s: Introduction to P	obability Models (9th edition)			
online materials Course Website	http://moo	odle.hku.hk				
	intp://iloo					
STAT3904	Corpora	ate finance for a	ctuarial science (6 credits)	Academic Year	2024	
Offering Department		& Actuarial Science	· · · ·	Quota		
Course Co-ordinator	Dr D Lee,	Statistics & Actuari	al Science (leedav@hku.hk)			
Teachers Involved	(Dr D Lee	,Statistics & Actuari	al Science)			
Course Objectives	Finance f principles	rom the Society of of corporate finan	actuarial science students to receive Actuaries. The objective of this course ce. The course will provide students w noing decisions for corporations.	is to introduce students	to the fundamental	
Course Contents & Topics	The first p covered in measures important capital as	part of the course w n STAT2902 and S and performance a topics of corporate set pricing model,	vill give an introduction to corporate fina TAT3615. These include financial marke assessment of financial performance. The finance including: portfolio theory, utilit weighted average cost of capital, mark financial leverage and firm value.	ts and companies, time v ne main part of the course ty theory, Markowitz mear	alue of money, and will focus on some n-variance analysis,	
Course Learning	On succes	ssful completion of	this course, students should be able to:			
Outcomes	CLO 1 de	escribe the tasks of	a financial manager and the financial de	cisions made by a corpora	tion	
	CLO 3 as	ssess financial perfo	ent and future values in calculating the va prmance using various investment criteria riance portfolio theory, capital asset pricir	a and techniques of project		

CLO 5 identify the factors to be considered by a company when deciding on its capital structure and dividend policy, and also the impact of financial leverage and long/short term financing policies on capital structure CLO 6 describe the various forms of market efficiency, and explain investor behaviour using behavioural finance

 CLO 6 describe the various forms of market efficiency, and explain investor behaviour using behavioural finan theories

 CLO 7 explain the core features of the utility theory

 Pre-requisites
 [(Pass in ACCT1101 and STAT2902) or (Pass in STAT3615)]; and

 (and Co-requisites
 Not for students who have passed in FINA1310, or have already enrolled in this course.

and Impermissible combinations)

Offer in 2024 - 2025	Y 1st	sem Offer in 202	25 - 2026 : Y	Examination	Dec	
Grade Descriptors	Α		gh mastery at an advanced level of extensive kno			
(A+ to F)		learning outcomes. S apply knowledge to	how strong analytical and critical abilities and logica a wide range of complex, familiar and unfamilia	al thinking, with evidence of origin	nal thought, and ability	
	Presentational skills. B Demonstrate substantial command of a broad range of knowledge and skills required for attaining at least most of the course learning outcomes. Show evidence of analytical and critical abilities and logical thinking, and ability to apply knowledge to familiar					
	C	and some unfamiliar situations. Apply effective organizational and presentational skills.				
	<u> </u>	familiar situations. Ap	dence of some analytical and critical abilities and oply moderately effective organizational and present	ational skills.		
	D	Show evidence of so	but limited command of knowledge and skills requi me coherent and logical thinking, but with limited ar roblems. Apply limited or barely effective organizatio	nalytical and critical abilities. She		
	Fail	Demonstrate little or of analytical and critic	no evidence of command of knowledge and skills r cal abilities, logical and coherent thinking. Show ver sentational skills are minimally effective or ineffectiv	equired for attaining the course y little or no ability to apply know		
Communication- ntensive Course	N					
Course Type	Lecture-ba	ased course				
Course Teaching	Activities	S	Details		No. of Hours	
& Learning Activities	Lectures				36	
	Tutorials Reading /	/ Self study			12 100	
Assessment Methods	Methods	,	Details	Weighting in final	Assessment	
and Weighting	Wethous		Details	course grade (%)	Methods to CLO Mapping	
	Examinat	ion	One 3-hour written examination	75	CLO 1, 2, 3, 4, 5, 6, 7	
	Assignme	ents	Coursework (assignments, tutorials, and a class test)	25	CLO 1, 2, 3, 4, 5, 6, 7	
Required/recommended reading and online materials		Brealey, R.A., Myers, S.C., Allen, F.: Principles of Corporate Finance (McGraw-Hill, 2020, 13t Berk, J., DeMarzo, P.: Corporate Finance (Pearson, 2020, 5th edition)				
Course Website	http://moo	dle.hku.hk				
STAT3905	Introduc	ction to financia	al derivatives (6 credits)	Academic Year	r 2024	
Offering Department		& Actuarial Science		Quota		
Course Co-ordinator						
		Prof T Boonen, Statistics & Actuarial Science (tjboonen@hku.hk)				
Teachers Involved						
	(Prof T Bo	onen,Statistics & A	Actuarial Science)	luation of derivatives. The	e two basic types o	
	(Prof T Bo Nowadays derivatives be decom aims at de	oonen,Statistics & A s all risk managers s are forwards (ha posed to these ur emonstrating the p	Actuarial Science) s must be well versed in the use and va ving a linear payoff) and options (having iderlying payoffs or alternatively they are ractical use of financial derivatives in risk	a non-linear payoff). All c variations on these basic	other derivatives ca c ideas. This cours	
Course Objectives	(Prof T Bo Nowadays derivatives be decom aims at de hedging st	oonen,Statistics & A s all risk managers s are forwards (ha posed to these ur emonstrating the p trategies, and the	Actuarial Science) s must be well versed in the use and va ving a linear payoff) and options (having iderlying payoffs or alternatively they are ractical use of financial derivatives in risk no-arbitrage principle.	a non-linear payoff). All c variations on these basic management. Emphase	other derivatives ca c ideas. This cours s are on pricing an	
Course Objectives Course Contents	(Prof T Bo Nowadays derivatives be decom aims at de hedging st Derivative	oonen, Statistics & A s all risk managers s are forwards (ha posed to these ur emonstrating the p trategies, and the s; short-selling; c	Actuarial Science) s must be well versed in the use and va ving a linear payoff) and options (having iderlying payoffs or alternatively they are ractical use of financial derivatives in risk no-arbitrage principle. all options; put options; equity-linked Cl	a non-linear payoff). All c variations on these basic management. Emphase D; trading strategies; hec	other derivatives ca c ideas. This cours is are on pricing an dging; forwards an	
Course Objectives Course Contents & Topics	(Prof T Bo Nowadays derivatives be decom aims at de hedging sl Derivative futures; co	sonen, Statistics & A s all risk managers s are forwards (ha posed to these ur emonstrating the p trategies, and the s; short-selling; co pormodity swaps; in	Actuarial Science) s must be well versed in the use and va ving a linear payoff) and options (having iderlying payoffs or alternatively they are ractical use of financial derivatives in risk no-arbitrage principle. all options; put options; equity-linked CI interest rate swaps; put-call parity; binomia	a non-linear payoff). All c variations on these basic management. Emphase D; trading strategies; hec	other derivatives ca c ideas. This cours is are on pricing an dging; forwards an	
Course Objectives Course Contents & Topics Course Learning	(Prof T Bo Nowadays derivatives be decom aims at de hedging st Derivative futures; cc On succes	oonen, Statistics & A s all risk managers s are forwards (ha posed to these ur emonstrating the p trategies, and the s; short-selling; c ommodity swaps; in ssful completion of	Actuarial Science) s must be well versed in the use and va ving a linear payoff) and options (having iderlying payoffs or alternatively they are ractical use of financial derivatives in risk no-arbitrage principle. all options; put options; equity-linked CI interest rate swaps; put-call parity; binomia this course, students should be able to:	a non-linear payoff). All c variations on these basic management. Emphase D; trading strategies; hec al model; Black-Scholes of	other derivatives ca c ideas. This cours s are on pricing ar dging; forwards an	
Course Objectives Course Contents & Topics Course Learning	(Prof T Bo Nowadays derivatives be decom aims at de hedging st Derivative futures; cc On succes CLO 1 de	s all risk managers s are forwards (ha posed to these ur emonstrating the p trategies, and the r s; short-selling; c ommodity swaps; in ssful completion of efine and recognize	Actuarial Science) s must be well versed in the use and va ving a linear payoff) and options (having iderlying payoffs or alternatively they are ractical use of financial derivatives in risk no-arbitrage principle. all options; put options; equity-linked CI therest rate swaps; put-call parity; binomia this course, students should be able to: the definitions of terms commonly used	a non-linear payoff). All c variations on these basic management. Emphase D; trading strategies; hec al model; Black-Scholes of in derivatives markets	other derivatives ca c ideas. This cours s are on pricing ar dging; forwards ar ption pricing model	
Course Objectives Course Contents & Topics Course Learning	(Prof T Bo Nowadays derivatives be decom aims at de hedging st Derivative futures; cc On succes CLO 1 de CLO 2 ev	s all risk managers s are forwards (ha posed to these ur emonstrating the p trategies, and the i s; short-selling; c ommodity swaps; in ssful completion of efine and recognize valuate the payoff,	Actuarial Science) s must be well versed in the use and va ving a linear payoff) and options (having iderlying payoffs or alternatively they are ractical use of financial derivatives in risk no-arbitrage principle. all options; put options; equity-linked CI therest rate swaps; put-call parity; binomia this course, students should be able to: the definitions of terms commonly used profit, and properties of basic derivative c	a non-linear payoff). All c variations on these basic management. Emphase D; trading strategies; hec al model; Black-Scholes of in derivatives markets ontracts, including forward	other derivatives ca c ideas. This cours s are on pricing ar dging; forwards an ption pricing model	
Course Objectives Course Contents & Topics Course Learning	(Prof T Bo Nowadays derivatives be decom aims at de hedging st Derivative futures; cc On succes CLO 1 de CLO 2 ev CLO 3 ex	s all risk managers s are forwards (ha posed to these ur emonstrating the p trategies, and the i s; short-selling; c ommodity swaps; in ssful completion of efine and recognize valuate the payoff, cplain how derivation	Actuarial Science) s must be well versed in the use and va ving a linear payoff) and options (having iderlying payoffs or alternatively they are ractical use of financial derivatives in risk no-arbitrage principle. all options; put options; equity-linked CI therest rate swaps; put-call parity; binomia this course, students should be able to: the definitions of terms commonly used profit, and properties of basic derivative c ve securities can be used as tools to man	a non-linear payoff). All ce variations on these basic management. Emphase D; trading strategies; hec al model; Black-Scholes of in derivatives markets ontracts, including forward age financial risk	other derivatives ca c ideas. This cours s are on pricing an dging; forwards an ption pricing model	
Course Objectives Course Contents & Topics Course Learning Outcomes	(Prof T Bo Nowadays derivatives be decom aims at de hedging st Derivative futures; cc On succes CLO 1 de CLO 2 ev CLO 3 ex CLO 4 ca	s all risk managers s are forwards (ha posed to these ur emonstrating the p trategies, and the i s; short-selling; c ommodity swaps; in ssful completion of efine and recognize valuate the payoff, cplain how derivativa alculate option price	Actuarial Science) s must be well versed in the use and va ving a linear payoff) and options (having iderlying payoffs or alternatively they are ractical use of financial derivatives in risk no-arbitrage principle. all options; put options; equity-linked CI therest rate swaps; put-call parity; binomia this course, students should be able to: the definitions of terms commonly used profit, and properties of basic derivative c	a non-linear payoff). All ce variations on these basic management. Emphase D; trading strategies; hec al model; Black-Scholes of in derivatives markets ontracts, including forward age financial risk	other derivatives ca c ideas. This cours s are on pricing an dging; forwards an ption pricing model	
Course Objectives Course Contents & Topics Course Learning Outcomes Pre-requisites	(Prof T Bo Nowadays derivatives be decom aims at de hedging st Derivative futures; cc On succes CLO 1 de CLO 2 ev CLO 3 ex CLO 4 ca Pass in S	sonen, Statistics & A s all risk managers s are forwards (ha posed to these ur emonstrating the p trategies, and the r es; short-selling; c pommodity swaps; in ssful completion of efine and recognize valuate the payoff, kplain how derivativa alculate option price TAT2902; and	Actuarial Science) s must be well versed in the use and va ving a linear payoff) and options (having iderlying payoffs or alternatively they are ractical use of financial derivatives in risk no-arbitrage principle. all options; put options; equity-linked CI nterest rate swaps; put-call parity; binomia this course, students should be able to: a the definitions of terms commonly used profit, and properties of basic derivative c ve securities can be used as tools to mana e using binomial model and Black-Scholes	a non-linear payoff). All ce variations on these basic management. Emphase D; trading strategies; hec al model; Black-Scholes of in derivatives markets ontracts, including forward age financial risk s option pricing model	other derivatives ca c ideas. This cours s are on pricing an dging; forwards an ption pricing model ds, futures, options	
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Course Objectives	(Prof T Bo Nowadays derivatives be decom aims at de hedging st Derivative futures; cc On succes CLO 1 de CLO 2 ev CLO 3 ex CLO 4 ca Pass in S ^T Not for st STAT3618 For BSc(A Y 2nd A B C D Fail N Lecture-ba	ased course	Actuarial Science) a must be well versed in the use and va ving a linear payoff) and options (having iderlying payoffs or alternatively they are ractical use of financial derivatives in risk no-arbitrage principle. all options; put options; equity-linked CI interest rate swaps; put-call parity; binomia this course, students should be able to: a the definitions of terms commonly used profit, and properties of basic derivative c ve securities can be used as tools to man- e using binomial model and Black-Scholes passed or already enrolled in any of the students only. 25 - 2026 : Y gh mastery at an advanced level of extensive kno- how evidence of analytical and critical abilities and logica a wide range of complex, familiar and unfamiliar thial command of a broad range of knowledge and ski dence of some analytical and critical abilities and situations. Apply effective organizational and presern I but incomplete command of knowledge and skills requi me coherent and logical thinking, but with limited ar roblems. Apply limited or barely effective organization ne vidence of command of knowledge and skills requi me coherent and logical thinking, but with limited ar roblems. Apply limited or barely effective organization a bilities, logical and cherent thinking. Show veri- sentational skills are minimally effective or ineffective sentational skills are minimally effective or ineffective	a non-linear payoff). All ca a variations on these basic management. Emphase D; trading strategies; heca al model; Black-Scholes of in derivatives markets ontracts, including forward age financial risk s option pricing model the following courses: FIN Examination owledge and skills required for al thinking, with evidence of origin ar situations. Apply highly effect d skills required for attaining at logical thinking, and ability to ap tational skills. dills required for attaining most logical thinking, and ability to ap tational skills. equired for attaining some of the co nalytical and critical abilities. Sho onal and presentational skills. equired for attaining the course y little or no ability to apply know	Action of Hours action of Hours	
Course Objectives	(Prof T Bo Nowadays derivatives be decom aims at de hedging st Derivative futures; cc On succes CLO 1 de CLO 2 ev CLO 3 ex CLO 4 ca Pass in S ^T Not for st STAT3618 For BSc(A Y 2nd A B C D Fail N Lecture-ba Activities	ased course	Actuarial Science) a must be well versed in the use and va ving a linear payoff) and options (having iderlying payoffs or alternatively they are ractical use of financial derivatives in risk no-arbitrage principle. all options; put options; equity-linked CI interest rate swaps; put-call parity; binomia this course, students should be able to: a the definitions of terms commonly used profit, and properties of basic derivative c ve securities can be used as tools to man- e using binomial model and Black-Scholes passed or already enrolled in any of the students only. 25 - 2026 : Y gh mastery at an advanced level of extensive kno- how evidence of analytical and critical abilities and logica a wide range of complex, familiar and unfamiliar thial command of a broad range of knowledge and ski dence of some analytical and critical abilities and situations. Apply effective organizational and presern I but incomplete command of knowledge and skills requi me coherent and logical thinking, but with limited ar roblems. Apply limited or barely effective organization ne vidence of command of knowledge and skills requi me coherent and logical thinking, but with limited ar roblems. Apply limited or barely effective organization a bilities, logical and cherent thinking. Show veri- sentational skills are minimally effective or ineffective sentational skills are minimally effective or ineffective	a non-linear payoff). All ca a variations on these basic management. Emphase D; trading strategies; heca al model; Black-Scholes of in derivatives markets ontracts, including forward age financial risk s option pricing model the following courses: FIN Examination owledge and skills required for al thinking, with evidence of origin ar situations. Apply highly effect d skills required for attaining at logical thinking, and ability to ap tational skills. dills required for attaining most logical thinking, and ability to ap tational skills. equired for attaining some of the co nalytical and critical abilities. Sho onal and presentational skills. equired for attaining the course y little or no ability to apply know	Action of Hours No. of Hours No. of Hours bither derivatives calco c ideas. This course c ideas. This course c ideas. This course attaining forwards an ption pricing model ds, futures, options May attaining all the course least most of the course learning outcomes bither on the course attaining all the course learning outcomes bither on the course bither of the course bither of the course bither of the course bither of the course bither on the course bither	
Teachers Involved Course Objectives Course Contents & Topics Course Learning Outcomes Pre-requisites (and Co-requisites and Impermissible combinations) Offer in 2024 - 2025 Grade Descriptors (A+ to F) Communication- intensive Course Course Type Course Teaching & Learning Activities	(Prof T Bo Nowadays derivatives be decom aims at de hedging st Derivative futures; cc On succes CLO 1 de CLO 2 ev CLO 3 ex CLO 4 ca Pass in S Not for st STAT3618 For BSc(A Y 2nd A B C D Fail N Lecture-ba Activities Lectures Tutorials	ased course	Actuarial Science) a must be well versed in the use and va ving a linear payoff) and options (having iderlying payoffs or alternatively they are ractical use of financial derivatives in risk no-arbitrage principle. all options; put options; equity-linked CI interest rate swaps; put-call parity; binomia this course, students should be able to: a the definitions of terms commonly used profit, and properties of basic derivative c ve securities can be used as tools to man- e using binomial model and Black-Scholes passed or already enrolled in any of the students only. 25 - 2026 : Y gh mastery at an advanced level of extensive kno- how evidence of analytical and critical abilities and logica a wide range of complex, familiar and unfamiliar thial command of a broad range of knowledge and ski dence of some analytical and critical abilities and situations. Apply effective organizational and presern I but incomplete command of knowledge and skills requi me coherent and logical thinking, but with limited ar roblems. Apply limited or barely effective organization ne vidence of command of knowledge and skills requi me coherent and logical thinking, but with limited ar roblems. Apply limited or barely effective organization a bilities, logical and cherent thinking. Show veri- sentational skills are minimally effective or ineffective sentational skills are minimally effective or ineffective	a non-linear payoff). All ca a variations on these basic management. Emphase D; trading strategies; heca al model; Black-Scholes of in derivatives markets ontracts, including forward age financial risk s option pricing model the following courses: FIN Examination owledge and skills required for al thinking, with evidence of origin ar situations. Apply highly effect d skills required for attaining at logical thinking, and ability to ap tational skills. dills required for attaining most logical thinking, and ability to ap tational skills. equired for attaining some of the co nalytical and critical abilities. Sho onal and presentational skills. equired for attaining the course y little or no ability to apply know	Action of Hours action of Hours action of Hours action of Hours action of Hours action of Hours action of the action action of the action of the action action of the action of	
Course Objectives Course Contents & Topics Course Learning Outcomes Pre-requisites (and Co-requisites and Impermissible combinations) Offer in 2024 - 2025 Grade Descriptors (A+ to F) Communication- intensive Course Course Type Course Teaching	(Prof T Bo Nowadays derivatives be decom aims at de hedging st Derivative futures; cc On succes CLO 1 de CLO 2 ev CLO 3 ex CLO 4 ca Pass in S Not for st STAT3618 For BSc(A Y 2nd A B C D Fail N Lecture-ba Activities Lectures Tutorials	s all risk managers s are forwards (ha posed to these ur emonstrating the p trategies, and the r s; short-selling; c; ommodity swaps; in ssful completion of efine and recognize valuate the payoff, kplain how derivativa alculate option prior TAT2902; and tudents who have 3; and Actuarial Science) s apply knowledge to presentational skills. Demonstrate substan learning outcomes. S apply knowledge to solve of solve p Demonstrate partial Show evidence of so knowledge to solve p Demonstrate little or of analytical and critit Organization and pre	Actuarial Science) a must be well versed in the use and va ving a linear payoff) and options (having iderlying payoffs or alternatively they are ractical use of financial derivatives in risk no-arbitrage principle. all options; put options; equity-linked CI interest rate swaps; put-call parity; binomia this course, students should be able to: a the definitions of terms commonly used profit, and properties of basic derivative c ve securities can be used as tools to man- e using binomial model and Black-Scholes passed or already enrolled in any of the students only. 25 - 2026 : Y gh mastery at an advanced level of extensive kno- how evidence of analytical and critical abilities and logica a wide range of complex, familiar and unfamiliar thial command of a broad range of knowledge and ski dence of some analytical and critical abilities and situations. Apply effective organizational and presern I but incomplete command of knowledge and skills requi me coherent and logical thinking, but with limited ar roblems. Apply limited or barely effective organization ne vidence of command of knowledge and skills requi me coherent and logical thinking, but with limited ar roblems. Apply limited or barely effective organization a bilities, logical and cherent thinking. Show veri- sentational skills are minimally effective or ineffective sentational skills are minimally effective or ineffective	a non-linear payoff). All ca a variations on these basic management. Emphase D; trading strategies; heca al model; Black-Scholes of in derivatives markets ontracts, including forward age financial risk s option pricing model the following courses: FIN Examination owledge and skills required for al thinking, with evidence of origin ar situations. Apply highly effect d skills required for attaining at logical thinking, and ability to ap tational skills. dills required for attaining most logical thinking, and ability to ap tational skills. equired for attaining some of the co nalytical and critical abilities. Sho onal and presentational skills. equired for attaining the course y little or no ability to apply know	Action of the course learning outcomes by knowledge to familia of the course learning outcomes by limited ability to appl learning outcomes. Lac ledge to solve problems No. of Hours 36 12	

	Assignme	nts	Coursework (assignments,	25	CLO 1, 2, 3, 4	
Required/recommended	Ū		tutorials, and a class test) es Markets (3rd Edition). Pearson.			
reading and			es, and Other Derivatives (10th Editio	n). Pearson.		
online materials		· / ·	ent and Financial Institutions (5th Edi	tion). Wiley.		
Course Website	http://mood	lle.hku.hk				
CTAT200C	Diak that	mul (Corodito)		Academic Yea	r 2024	
STAT3906 Offering Department		ory I (6 credits) Actuarial Science		Quota	r 2024	
Course Co-ordinator			uarial Science (kccg@hku.hk)	Quota		
Teachers Involved		Cheung, Statistics & Act				
Course Objectives	stochastic	processes to insurance	pics in actuarial science. Risk theor problems such as the premium calc	ulation.		
Course Contents & Topics	Severity m	odels; frequency mode	ls; collective risk models; coverage n	nodifications; risk measu	res.	
Course Learning	On succes	sful completion of this	course, students should be able to:			
Dutcomes	of t CLO 2 est am	the total claim amounts timate the premium of nounts made in previou	a policyholder and the total claim s years	amounts using the infor		
			used risk measures and explain the	ir use and limitation		
Pre-requisites (and Co-requisites and Impermissible combinations)	Pass in MA	AT3903, or already enr ATH3603 or STAT3603				
Offer in 2024 - 2025 Grade Descriptors		sem Offer in 2025 - 2	U26:Y stery at an advanced level of extensive kno	Examination	Dec	
(A+ to F)	A	learning outcomes. Show si apply knowledge to a wid presentational skills.	trong analytical and critical abilities and logical le range of complex, familiar and unfamilia	thinking, with evidence of original relations. Apply highly effective to the second se	nal thought, and ability to ective organizational and	
	C					
	outcomes. Show evidence of some analytical and critical abilities and logical thinking, and ability to apply knowledge to most familiar situations. Apply moderately effective organizational and presentational skills. D Demonstrate partial but limited command of knowledge and skills required for attaining some of the course learning outcomes. Show evidence of some coherent and logical thinking, but with limited analytical and critical abilities. Show limited ability to apply					
	 Knowledge to solve problems. Apply limited or barely effective organizational and presentational skills. Fail Demonstrate little or no evidence of command of knowledge and skills required for attaining the course learning outcomes. Lack of analytical and critical abilities, logical and coherent thinking. Show very little or no ability to apply knowledge to solve problems. Organization and presentational skills are minimally effective or ineffective. 					
Communication-	N	Organization and presentat	ional skills are minimally effective or ineffective	3.		
intensive Course Course Type	Locturo ba	sed course				
Course Teaching	Activities		Details		No. of Hours	
& Learning Activities	Lectures				36	
	Tutorials				12	
	Reading /	Self study			100	
Assessment Methods and Weighting	Methods		Details	Weighting in final course grade (%)	Assessment Methods to CLO Mapping	
	Examination	on	One 3-hour written examination	75	CLO 1, 2, 3	
	Assignme	nts	Coursework (assignments, tutorials, and a class test)	25	CLO 1, 2, 3	
Required/recommended reading and online materials	Klugman S 5th edition)		illmot G. E.: Loss Models: From Data	to Decisions (John Wile	y & Sons, Inc., 2019	
Course Website	http://mood	lle.hku.hk				
STAT3907	Linear m	odels and forecast	ting (6 credits)	Academic Yea	r 2024	
Offering Department		Actuarial Science		Quota		
Course Co-ordinator			tuarial Science (hcheung4@hku.hk)			
Feachers Involved Course Objectives	This course	Cheung,Statistics & Act e deals with applied sta ing linear models and t	atistical methods of linear models and	d investigates various for	recasting procedure	
Course Contents			regression; predicting; generalized	inear models; time seri	es models includin	
& Topics	autoregres	sive, moving average,	autoregressive-moving average and			
Course Learning Dutcomes	On succes CLO 1		course, students should be able to: e linear regression model to real data	3		
	CLO 2	do ANOVA analysis				
	CLO 3		able AR, MA or ARMA model to real d	lata		
	CLO 4	perform residual ana				
	CLO 5 CLO 6	do forecasting with the fit generalized linear				
Pre-requisites		v	or already enrolled in this course; and	d		
(and Co-requisites and Impermissible	Not for stud	dents who have passed	d in STAT3600, or have already enrol d in STAT4601, or have already enrol	led in this course; and		
combinations)	Not for stur		d in ECON2280, or have already enro	olled in this course and		

Offer in 2024 - 2025	Y 2nd	sem Offer in 2025 ·	- 2026 : Y	Examination	May
Grade Descriptors	Α		nastery at an advanced level of extensive kno		
(A+ to F)		learning outcomes. Show	strong analytical and critical abilities and logical vide range of complex, familiar and unfamilia	thinking, with evidence of origi	nal thought, and ability to
	 B Demonstrate substantial command of a broad range of knowledge and skills required for attaining at least most of the course learning outcomes. Show evidence of analytical and critical abilities and logical thinking, and ability to apply knowledge to familiar and some unfamiliar situations. Apply effective organizational and presentational skills. 				
	С	Demonstrate general bu outcomes. Show evidence	t incomplete command of knowledge and ski ce of some analytical and critical abilities and l	lls required for attaining mos ogical thinking, and ability to a	
	D	Demonstrate partial but I Show evidence of some	moderately effective organizational and presenta imited command of knowledge and skills requir coherent and logical thinking, but with limited an	ed for attaining some of the co alytical and critical abilities. Sh	
	Fail	Demonstrate little or no e of analytical and critical a	ems. Apply limited or barely effective organizatio evidence of command of knowledge and skills re bilities, logical and coherent thinking. Show very iational skills are minimally effective or ineffective	quired for attaining the course little or no ability to apply know	
Communication- ntensive Course	N	Organization and present			
ourse Type	Lecture-ba	ased course			
Course Teaching	Activities	5	Details		No. of Hours
Learning Activities	Lectures				36
	Tutorials				12
	Reading /	/ Self study			100
Assessment Methods	Methods		Details	Weighting in final	Assessment
and Weighting				course grade (%)	Methods to CLO Mapping
	Examinat	ion	One 3-hour written examination Coursework (assignments.	75	CLO 1, 2, 3, 4, 5, 6
	Assignme	ents	Coursework (assignments, tutorials, a computer-based assessment and a class test)	25	CLO 1, 2, 3, 4, 5, 6
Required/recommended eading and			Econometric Models and Economic F al Methods for Forecasting (John Wile		
online materials	G. E. P. B edition) G James,	Box, G. M. Jenkins & G D Witten, T Hastie ar	G. Reinsel: Time Series Analysis: Fore nd R Tibshirani (2021) An Introduction	casting and Control (Pre	ntice Hall, 1994, 3rd
Course Website		dition, Springer odle.hku.hk			
STAT3908	Credibil	ity theory and los	s distributions (6 credits)	Academic Yea	r 2024
Offering Department		& Actuarial Science	· · ·	Quota	
Course Co-ordinator	Prof M Ho	ofert, Statistics & Actua	arial Science (mhofert@hku.hk)		
eachers Involved	(Prof M H	ofert, Statistics & Actua	arial Science)		
Course Objectives	example f to credibili quantile n rate funct	or premium calculation ity theory. Loss distrib natching, maximum lik tion, kernel density)	construction of statistical estimators ns. There are different approaches (lim utions are at the core of actuarial scien kelihood estimation) and nonparametri estimation under full, grouped, trun ction are of theoretical interest and prac	ited fluctuation, Bayesia ce and their parametric (c (empirical distribution, cated and censored da	n, greatest accuracy method of moments survival and hazard
Course Contents & Topics	Bayesian Straub mo moments,	modelling, pure and odel); mathematical s quantile matching, n	Il credibility, partial credibility); Bayesi Bayesian premium); greatest accura statistics (point estimation, interval es naximum likelihood); nonparametric es lensity); modified data (grouped, tru	cy credibility (Buhlmanı timation); parametric es stimation (empirical distr	n model, Buhlmann stimation (method o ibution, survival and
Course Learning	On succes		s course, students should be able to:		
Dutcomes	CLO 2 ur	nderstand and apply B	mited fluctuation credibility including cri ayesian methodology (including conjug	jate priors)	·
	ur	nderstand the relations	greatest accuracy credibility (Buhl ship of these to the Bayesian premium)		Straub models and
			ne basics of mathematical statistics onparametric and parametric estimator	s	
			nodified data concepts (grouped, trunca		
			ility of a fitted model and/or compare m		
and Co-requisites		TAT2602 or STAT3902	ility of a fitted model and/or compare m 2 or STAT3906		
and Co-requisites nd Impermissible					
and Co-requisites nd Impermissible ombinations)	Pass in S	TAT2602 or STAT3902	2 or STAT3906		Мау
and Co-requisites nd Impermissible ombinations) Offer in 2024 - 2025	Pass in S	TAT2602 or STAT3902 I sem Offer in 2025	2 or STAT3906	Examination	May attaining all the course
and Co-requisites and Impermissible combinations) Offer in 2024 - 2025	Pass in S	TAT2602 or STAT3902 sem Offer in 2025 Demonstrate thorough n learning outcomes. Show	2 or STAT3906	Examination	 attaining all the course nal thought, and ability to
and Co-requisites and Impermissible combinations) Offer in 2024 - 2025 Grade Descriptors	Pass in S	A sem Offer in 2025 Demonstrate thorough n learning outcomes. Show apply knowledge to a v presentational skills. Demonstrate substantial learning outcomes. Show	2 or STAT3906 2026 : Y nastery at an advanced level of extensive kno strong analytical and critical abilities and logical	Examination wledge and skills required for thinking, with evidence of origi r situations. Apply highly effe skills required for attaining at gical thinking, and ability to ap	attaining all the course nal thought, and ability to ctive organizational and least most of the course
Pre-requisites (and Co-requisites and Impermissible combinations) Offer in 2024 - 2025 Grade Descriptors (A+ to F)	Pass in S Y 2nd A	A sem Offer in 2025 Demonstrate thorough n learning outcomes. Show apply knowledge to a v presentational skills. Demonstrate substantial learning outcomes. Show and some unfamiliar situe Demonstrate general bu outcomes. Show evidence	2 or STAT3906 - 2026 : Y hastery at an advanced level of extensive kno strong analytical and critical abilities and logical vide range of complex, familiar and unfamilia command of a broad range of knowledge and evidence of analytical and critical abilities and le	Examination wledge and skills required for thinking, with evidence of origi r situations. Apply highly effe skills required for attaining at ogical thinking, and ability to a ational skills. Ils required for attaining mos ogical thinking, and ability to a	attaining all the course nal thought, and ability to ictive organizational and least most of the course ply knowledge to familiar t of the course learning
and Co-requisites and Impermissible combinations) Offer in 2024 - 2025 Grade Descriptors	Pass in S Y 2nd A B	TAT2602 or STAT3902 d sem Offer in 2025 - Demonstrate thorough n learning outcomes. Show apply knowledge to a v presentational skills. Demonstrate substantial learning outcomes. Show and some unfamiliar situe Demonstrate general bu outcomes. Show evidenc familiar situations. Apply Demonstrate partial but I Show evidence of some knowledge to solve probl	2 or STAT3906 2026 : Y hastery at an advanced level of extensive kno strong analytical and critical abilities and logical vide range of complex, familiar and unfamilia command of a broad range of knowledge and revidence of analytical and critical abilities and l ations. Apply effective organizational and present t incomplete command of knowledge and ski se of some analytical and critical abilities and I	Examination whedge and skills required for thinking, with evidence of origi r situations. Apply highly effe skills required for attaining at gical thinking, and ability to a ational skills. Ils required for attaining mos ogical thinking, and ability to a tional skills. ed for attaining some of the c alytical and critical abilities. Sh nal and presentational skills.	attaining all the course nal thought, and ability to ctive organizational and least most of the course ply knowledge to familiar to f the course learning apply knowledge to most purse learning outcomes, ow limited ability to apply

Communication-	N	· · ·	esentational skills are minimally ef		•		
intensive Course	i N						
Course Type	Lecture-ba	ased course					
Course Teaching	Activities		Details			No. of Hours	
& Learning Activities	Lectures	•	Details			36	
a Learning Activities	Tutorials					12	
		Calfatudu					
A	-	Self study				100	
Assessment Methods and Weighting	Methods		Details		Weighting in final course grade (%)	Assessment Methods to CLO Mapping	
	Examinat	ion	One 2-hour written		60	CLO 1, 2, 3, 4, 5, 6, 7	
	Assignme		Coursework tutorials, and a clas		40	CLO 1, 2, 3, 4, 5, 6, 7	
Required/recommended reading and online materials	edition).		., & Willmot G. E.: Loss Mo	dels: From Data	a to Decisions (John Wile	ey & Sons, 2019, 5t	
Course Website	http://moo	dle.hku.hk					
STAT3909	L ife com	tingonaica II ((crodite)		Academic Yea	r 2024	
		tingencies II (6	,			2024	
Offering Department		& Actuarial Science			Quota		
Course Co-ordinator			rial Science (leedav@hku.l	ık)			
Teachers Involved		,Statistics & Actua					
Course Objectives		se aims at introdu theories of life co	ucing further topics in life i ntingencies.	nsurance. Empl	nasis will be placed on	applications of mor	
Course Contents & Topics Course Learning	This cour expenses models ar	se is a continua and asset share nd their applicatior	tion of the materials cove ss; Thiele's differential equ is in multiple decrement an f this course, students shou	ation and polic d multiple life the	y values at fractional y		
Pre-requisites	CLO 2 ap CLO 3 ca CLO 4 ar de CLO 5 ar CLO 6 ex	surances and ann oply the recursion alculate probabilition halyze multiple de perements halyze multiple life concept	es in gross premium and o uities formula and Thiele's differe es and actuarial present val crement models and calcul models and calculate the li of profit testing and perform dy enrolled in this course; a	ntial equation in ues under the m ate the life insur fe insurances a n relevant calcul	calculating policy values nultiple state model frame rances and annuities in n nd annuities in models w	s ework models with multiple	
(and Co-requisites and Impermissible combinations)		Actuarial Science)		na			
Offer in 2024 - 2025	Y 2nd	sem Offer in 20)25 - 2026 : Y		Examination	Мау	
Grade Descriptors (A+ to F)	A Demonstrate thorough mastery at an advanced level of extensive knowledge and skills required for attaining all the course learning outcomes. Show strong analytical and critical abilities and logical thinking, with evidence of original thought, and ability to apply knowledge to a wide range of complex, familiar and unfamiliar situations. Apply highly effective organizational and presentational skills.						
	B Demonstrate substantial command of a broad range of knowledge and skills required for attaining at least most of the course learning outcomes. Show evidence of analytical and critical abilities and logical thinking, and ability to apply knowledge to familiar and some unfamiliar situations. Apply effective organizational and presentational skills.						
	C Demonstrate general but incomplete command of knowledge and skills required for attaining most of the course learning outcomes. Show evidence of some analytical and critical abilities and logical thinking, and ability to apply knowledge to most						
	familiar situations. Apply moderately effective organizational and presentational skills. D Demonstrate partial but limited command of knowledge and skills required for attaining some of the course learning outcomes. Show evidence of some coherent and logical thinking, but with limited analytical and critical abilities. Show limited ability to apply						
	Fail	Demonstrate little of of analytical and crit	problems. Apply limited or barely e r no evidence of command of know ical abilities, logical and coherent presentational skills are minimally	wledge and skills re thinking. Show very	quired for attaining the course little or no ability to apply know		
Communication- ntensive Course	N						
Course Type	Lecture-ha	ased course					
Course Teaching			Details			No. of Hours	
Learning Activities	Activities	•	Details				
Learning Activities	Lectures					36	
	Tutorials					12	
	Reading /	Self study				100	
Assessment Methods and Weighting	Methods		Details		Weighting in final course grade (%)	Assessment Methods to CLO Mapping	
	Examinat	ion	One 3-hour written	examination	75	CLO 1, 2, 3, 4, 5,	
	Assignme		Coursework tutorials, a co	(assignments, omputer-based	25	6 CLO 1, 2, 3, 4, 5, 6	
Required/recommended reading and							

STAT3910	Financia	l economics I (6 cr	redits)	Academic Year	2024			
Offering Department		Actuarial Science		Quota				
Course Co-ordinator		r A Lo, Statistics & Actuarial Science (amb10@hku.hk)						
Teachers Involved		tatistics & Actuarial Sci	ence) and hedging. The course will conce	ntrate on the theory and	idea of dorivativa			
Course Objectives		i risk management.	and nedging. The course will conce	nuale on the theory and	idea of derivative			
Course Contents			nerican options; conditional expectatio	n and discrete-time marti	ngale, discrete-tim			
& Topics		on pricing theory; true probabilities vs. risk-neutral probabilities; estimating volatility; the Black-Scholes fo lied volatility; option Greeks; market-making and hedging; exotic options.						
	on the Fina	the purposes of Institute and Faculty of Actuaries (IFoA) exemptions by accreditation, your score will be based he Final Exam (70%) and a computer-based assignment (30%).						
Course Learning			course, students should be able to:					
Outcomes	im	plied volatility	holes formula, including the assumpti strategies and portfolio, market-maker					
		derstand the market-m		nak, sen-intaneing portion	10			
			is, including Asian options, barrier op	tions, compound options	, gap options, and			
		change options						
N			martingales and option pricing theory					
Pre-requisites (and Co-requisites and Impermissible combinations)	Not for stu Not for stu	dents who have passe	ang d in STAT3618, or have already enroll d in FINA2322, or have already enroll d in MATH3906, or have already enro	ed in this course; and				
Offer in 2024 2025	Y 1st s	sem Offer in 2025 - 2	-	Examination	Dee			
Offer in 2024 - 2025 Grade Descriptors	A		suzo . f astery at an advanced level of extensive know	Examination	Dec attaining all the course			
(A+ to F)	Ŷ	learning outcomes. Show s	strong analytical and critical abilities and logical de range of complex, familiar and unfamiliar	thinking, with evidence of origin	al thought, and ability to			
	В							
	C Demonstrate general but incomplete command of knowledge and skills required for attaining most of the course learning outcomes. Show evidence of some analytical and critical abilities and logical thinking, and ability to apply knowledge to most							
	D	familiar situations. Apply moderately effective organizational and presentational skills. D Demonstrate partial but limited command of knowledge and skills required for attaining some of the course learning outcomes. Show evidence of some coherent and logical thinking, but with limited analytical and critical abilities. Show limited ability to apply						
	 knowledge to solve problems. Apply limited or barely effective organizational and presentational skills. Fail Demonstrate little or no evidence of command of knowledge and skills required for attaining the course learning outcomes. Lack of analytical and critical abilities, logical and coherent thinking. Show very little or no ability to apply knowledge to solve problems. 							
Communication-	N	Organization and presenta	tional skills are minimally effective or ineffective	h.				
intensive Course								
Course Type		ised course						
Course Type Course Teaching	Activities		Details		No. of Hours			
Course Type Course Teaching	Activities Lectures		Details		36			
Course Type Course Teaching	Activities Lectures Tutorials		Details		36 12			
Course Type Course Teaching & Learning Activities	Activities Lectures Tutorials Reading /			Weighting in final	36 12 100			
Course Type Course Teaching & Learning Activities Assessment Methods	Activities Lectures Tutorials Reading / Methods	Self study	Details	Weighting in final course grade (%)	36 12 100 Assessment Methods to CLO Mapping			
Course Type Course Teaching & Learning Activities Assessment Methods	Activities Lectures Tutorials Reading /	Self study	Details One 3-hour written examination		36 12 100 Assessment Methods			
Course Type Course Teaching & Learning Activities Assessment Methods	Activities Lectures Tutorials Reading / Methods	Self study on	Details	course grade (%)	36 12 100 Assessment Methods to CLO Mapping			
Course Type Course Teaching & Learning Activities Assessment Methods and Weighting Required/recommended reading and	Activities Lectures Tutorials Reading / Methods Examinati Assignme 1. Derivativ	Self study on nts ves Markets, Chapters	Details One 3-hour written examination Coursework (assignments, tutorials, a computer-based	course grade (%) 75 25 Robert L. McDonald.	36 12 100 Assessment Methods to CLO Mapping CLO 1, 2, 3, 4, 5			
Course Type Course Teaching & Learning Activities Assessment Methods and Weighting Required/recommended reading and online materials	Activities Lectures Tutorials Reading / Methods Examinati Assignme 1. Derivativ 2. Options	Self study on nts ves Markets, Chapters , Futures and Other De	Details One 3-hour written examination Coursework (assignments, tutorials, a computer-based assessment and a class test) 12-14, 2nd edition or later edition, by	course grade (%) 75 25 Robert L. McDonald.	36 12 100 Assessment Methods to CLO Mapping CLO 1, 2, 3, 4, 5			
Course Type Course Teaching & Learning Activities Assessment Methods and Weighting Required/recommended reading and online materials	Activities Lectures Tutorials Reading / Methods Examinati Assignme 1. Derivativ	Self study on nts ves Markets, Chapters , Futures and Other De	Details One 3-hour written examination Coursework (assignments, tutorials, a computer-based assessment and a class test) 12-14, 2nd edition or later edition, by	course grade (%) 75 25 Robert L. McDonald.	36 12 100 Assessment Methods to CLO Mapping CLO 1, 2, 3, 4, 5			
Course Type Course Teaching & Learning Activities Assessment Methods and Weighting Required/recommended reading and online materials Course Website	Activities Lectures Tutorials Reading / Methods Examinati Assignme 1. Derivativ 2. Options http://mood	Self study on nts ves Markets, Chapters , Futures and Other De dle.hku.hk	Details One 3-hour written examination Coursework (assignments, tutorials, a computer-based assessment and a class test) 12-14, 2nd edition or later edition, by privatives, 4th or later edition, by J. Hu	course grade (%) 75 25 Robert L. McDonald.	36 12 100 Assessment Methods to CLO Mapping CLO 1, 2, 3, 4, 5 CLO 1, 2, 3, 4, 5			
Course Type Course Teaching & Learning Activities Assessment Methods and Weighting Required/recommended reading and online materials Course Website	Activities Lectures Tutorials Reading / Methods Examinati Assignme 1. Derivatin 2. Options http://mood	Self study on nts ves Markets, Chapters , Futures and Other De	Details One 3-hour written examination Coursework (assignments, tutorials, a computer-based assessment and a class test) 12-14, 2nd edition or later edition, by privatives, 4th or later edition, by J. Hu	course grade (%) 75 25 Robert L. McDonald. II.	36 12 100 Assessment Methods to CLO Mapping CLO 1, 2, 3, 4, 5 CLO 1, 2, 3, 4, 5			
Course Type Course Teaching & Learning Activities Assessment Methods and Weighting Required/recommended reading and online materials Course Website STAT3911 Offering Department	Activities Lectures Tutorials Reading / Methods Examinati Assignme 1. Derivatin 2. Options http://mood	Self study on nts ves Markets, Chapters , Futures and Other De dle.hku.hk I economics II (6 c & Actuarial Science Statistics & Actuarial S	Details One 3-hour written examination Coursework (assignments, tutorials, a computer-based assessment and a class test) 12-14, 2nd edition or later edition, by privatives, 4th or later edition, by J. Hu redits) science (wylsaas@hku.hk)	course grade (%) 75 25 Robert L. McDonald. II. Academic Year	36 12 100 Assessment Methods to CLO Mapping CLO 1, 2, 3, 4, 5 CLO 1, 2, 3, 4, 5			
Course Type Course Teaching & Learning Activities Assessment Methods and Weighting Required/recommended reading and online materials Course Website STAT3911 Offering Department Course Co-ordinator Teachers Involved	Activities Lectures Tutorials Reading / Methods Examinati Assignme 1. Derivativ 2. Options http://mood	Self study on nts ves Markets, Chapters , Futures and Other De dle.hku.hk I economics II (6 c & Actuarial Science Statistics & Actuarial S Statistics & Actuarial S	Details One 3-hour written examination Coursework (assignments, tutorials, a computer-based assessment and a class test) 12-14, 2nd edition or later edition, by J. Hu redits) redits) science (wy/saas@hku.hk) science)	course grade (%) 75 25 Robert L. McDonald. II. Academic Year Quota	36 12 100 Assessment Methods to CLO Mapping CLO 1, 2, 3, 4, 5 CLO 1, 2, 3, 4, 5 CLO 1, 2, 3, 4, 5			
Course Type Course Teaching & Learning Activities Assessment Methods and Weighting Required/recommended reading and online materials Course Website STAT3911 Offering Department Course Co-ordinator Teachers Involved	Activities Lectures Tutorials Reading / Methods Examinati Assignme 1. Derivativ 2. Options http://mood	Self study on nts ves Markets, Chapters , Futures and Other De dle.hku.hk I economics II (6 c & Actuarial Science Statistics & Actuarial S Statistics & Actuarial S	Details One 3-hour written examination Coursework (assignments, tutorials, a computer-based assessment and a class test) 12-14, 2nd edition or later edition, by privatives, 4th or later edition, by J. Hu redits) cicience (wylsaas@hku.hk) cicience) urse on the option pricing theory. The	course grade (%) 75 25 Robert L. McDonald. II. Academic Year Quota	36 12 100 Assessment Methods to CLO Mapping CLO 1, 2, 3, 4, 5 CLO 1, 2, 3, 4, 5 CLO 1, 2, 3, 4, 5			
Course Type Course Teaching & Learning Activities Assessment Methods and Weighting Required/recommended reading and online materials Course Website STAT3911 Offering Department Course Co-ordinator Teachers Involved Course Objectives	Activities Lectures Tutorials Reading / Methods Examinati Assignme 1. Derivativ 2. Options http://mood Financia Statistics & Prof W Li, (Prof W Li, This cours stochastic Brownian	Self study on nts ves Markets, Chapters , Futures and Other De dle.hku.hk I economics II (6 c & Actuarial Science Statistics & Actuarial S Statistics & Actuarial S statistics & Actuarial S e is an advanced cou calculus, and interest i motion; introduction t	Details One 3-hour written examination Coursework (assignments, tutorials, a computer-based assessment and a class test) 12-14, 2nd edition or later edition, by revivatives, 4th or later edition, by J. Hu redits) science (wylsaas@hku.hk) science) rrse on the option pricing theory. The models. o stochastic calculus; arithmetic an	course grade (%) 75 25 Robert L. McDonald. II. Academic Year Quota course covers Black-Sc d geometric Brownian n	36 12 100 Assessment Methods to CLO Mapping CLO 1, 2, 3, 4, 5 CLO 1, 2, 3, 4, 5 CLO 1, 2, 3, 4, 5 2024 			
Course Type Course Teaching & Learning Activities Assessment Methods and Weighting Required/recommended reading and online materials Course Website STAT3911 Offering Department Course Co-ordinator Feachers Involved Course Objectives Course Contents	Activities Lectures Tutorials Reading / Methods Examinati Assignme 1. Derivatin 2. Options http://mood Financia Statistics & Prof W Li, (Prof W Li, This cours stochastic Brownian Sharpe rat elasticity a	Self study on nts ves Markets, Chapters , Futures and Other De dle.hku.hk I economics II (6 c & Actuarial Science Statistics & Actuarial S Statistics & Actuarial S Statistics & Actuarial S e is an advanced cou calculus, and interest i motion; introduction t io and risk premium; B ind volatility; Vasicek,	Details One 3-hour written examination Coursework (assignments, tutorials, a computer-based assessment and a class test) 12-14, 2nd edition or later edition, by privatives, 4th or later edition, by J. Hu redits) redits ccience (wylsaas@hku.hk) ccience) urse on the option pricing theory. The models. o stochastic calculus; arithmetic an lack-Scholes equation; risk-neutral stc Cox-Ingersoll-Ross, and Black-Derma	course grade (%) 75 25 Robert L. McDonald. II. Academic Year Quota course covers Black-Sc d geometric Brownian n pock-price process and opt an-Toy models; delta-hed	36 12 100 Assessment Methods to CLO Mapping CLO 1, 2, 3, 4, 5 CLO 1, 2, 3, 4, 5 CLO 1, 2, 3, 4, 5 CLO 1, 2, 3, 4, 5			
Course Type Course Teaching & Learning Activities Assessment Methods and Weighting Required/recommended reading and online materials Course Website STAT3911 Offering Department Course Co-ordinator Teachers Involved Course Objectives Course Contents & Topics	Activities Lectures Tutorials Reading / Methods Examinati Assignme 1. Derivatin 2. Options http://mood Financia Statistics & Prof W Li, (Prof W Li, This cours stochastic Brownian Sharpe rat elasticity a the Sharpe	Self study on nts ves Markets, Chapters , Futures and Other De dle.hku.hk I economics II (6 c & Actuarial Science Statistics & Actuarial S Statistics & Actuarial S Statistics & Actuarial S statistics & Actuarial S is an advanced cou calculus, and interest i motion; introduction t io and risk premium; B and volatility; Vasicek, e-ratio equality constrai	Details One 3-hour written examination Coursework (assignments, tutorials, a computer-based assessment and a class test) 12-14, 2nd edition or later edition, by privatives, 4th or later edition, by J. Hu redits) redits ccience (wylsaas@hku.hk) ccience) urse on the option pricing theory. The models. o stochastic calculus; arithmetic an lack-Scholes equation; risk-neutral stc Cox-Ingersoll-Ross, and Black-Derma int; Black's model; options on zero-com	course grade (%) 75 25 Robert L. McDonald. II. Academic Year Quota course covers Black-Sc d geometric Brownian n pock-price process and opt an-Toy models; delta-hed	36 12 100 Assessment Methods to CLO Mapping CLO 1, 2, 3, 4, 5 CLO 1, 2, 3, 4, 5 CLO 1, 2, 3, 4, 5 CLO 1, 2, 3, 4, 5			
intensive Course Course Type Course Teaching & Learning Activities Assessment Methods and Weighting Required/recommended reading and online materials Course Website STAT3911 Offering Department Course Co-ordinator Teachers Involved Course Objectives Course Contents & Topics Course Learning Outcomes	Activities Lectures Tutorials Reading / Methods Examinati Assignme 1. Derivatin 2. Options http://mood Financia Statistics & Prof W Li, (Prof W Li, This cours stochastic Brownian Sharpe rat elasticity a the Sharpe	Self study on nts ves Markets, Chapters , Futures and Other De dle.hku.hk I economics II (6 c & Actuarial Science Statistics & Actuarial S Statistics & Actuarial S statistics & Actuarial S ise is an advanced cou calculus, and interest i motion; introduction t io and risk premium; B ind volatility; Vasicek, e-ratio equality constrai sful completion of this	Details One 3-hour written examination Coursework (assignments, tutorials, a computer-based assessment and a class test) 12-14, 2nd edition or later edition, by privatives, 4th or later edition, by J. Hu redits) redits ccience (wylsaas@hku.hk) ccience) urse on the option pricing theory. The models. o stochastic calculus; arithmetic an lack-Scholes equation; risk-neutral stc Cox-Ingersoll-Ross, and Black-Derma	course grade (%) 75 25 Robert L. McDonald. II. Academic Year Quota course covers Black-Sc d geometric Brownian n pock-price process and opt an-Toy models; delta-hed	36 12 100 Assessment Methods to CLO Mapping CLO 1, 2, 3, 4, 5 CLO 1, 2, 3, 4, 5 CLO 1, 2, 3, 4, 5 CLO 1, 2, 3, 4, 5			
Course Type Course Teaching & Learning Activities Assessment Methods and Weighting Required/recommended reading and online materials Course Website STAT3911 Offering Department Course Co-ordinator Teachers Involved Course Objectives Course Contents & Topics Course Learning	Activities Lectures Tutorials Reading / Methods Examinati Assignme 1. Derivativ 2. Options http://mood Financia Statistics & Prof W Li, (Prof W Li, This cours stochastic Brownian Sharpe rat elasticity a the Sharpe On succes CLO 1 CLO 2	Self study on nts ves Markets, Chapters , Futures and Other De dle.hku.hk I economics II (6 c Actuarial Science Statistics & Actuarial S Statistics & Actuarial S statistics & Actuarial S statistics & Actuarial S e is an advanced cou calculus, and interest i motion; introduction t io and risk premium; B ind volatility; Vasicek, e-ratio equality constrai sful completion of this understanding meas understanding condi	Details One 3-hour written examination Coursework (assignments, tutorials, a computer-based assessment and a class test) 12-14, 2nd edition or later edition, by arivatives, 4th or later edition, by J. Hutorials, atthe editis, atthe edition, by J. Hutorials, atthe ed	course grade (%) 75 25 Robert L. McDonald. II. Academic Year Quota course covers Black-Sc d geometric Brownian n pock-price process and opt an-Toy models; delta-hed	36 12 100 Assessment Methods to CLO Mapping CLO 1, 2, 3, 4, 5 CLO 1, 2, 3, 4, 5 CLO 1, 2, 3, 4, 5 CLO 1, 2, 3, 4, 5			
Course Type Course Teaching & Learning Activities Assessment Methods and Weighting Required/recommended reading and online materials Course Website STAT3911 Offering Department Course Co-ordinator Teachers Involved Course Objectives Course Contents & Topics Course Learning	Activities Lectures Tutorials Reading / Methods Examinati Assignme 1. Derivatin 2. Options http://mood Financia Statistics & Prof W Li, (Prof W Li, (Prof W Li, (Prof W Li, This cours stochastic Brownian Sharpe rat elasticity a the Sharpe On succes CLO 1	Self study on nts ves Markets, Chapters , Futures and Other De dle.hku.hk I economics II (6 c & Actuarial Science Statistics & Actuarial S Statistics & Actuarial S statistics & Actuarial S e is an advanced cou calculus, and interest i motion; introduction t io and risk premium; B and volatility; Vasicek, p-ratio equality constrai sful completion of this understanding meas understanding condi understand Brownia	Details One 3-hour written examination Coursework (assignments, tutorials, a computer-based assessment and a class test) 12-14, 2nd edition or later edition, by privatives, 4th or later edition, by J. Hutorials, a computer-based assessment and a class test) redits) redits) science (wylsaas@hku.hk) science) rrse on the option pricing theory. The models. o stochastic calculus; arithmetic an black-Scholes equation; risk-neutral stic Cox-Ingersoll-Ross, and Black-Dermaint; Black's model; options on zero-coildocourse, students should be able to: sure-theory-based probability	course grade (%) 75 25 Robert L. McDonald. II. Academic Year Quota course covers Black-Sc d geometric Brownian n pock-price process and opt an-Toy models; delta-hed	36 12 100 Assessment Methods to CLO Mapping CLO 1, 2, 3, 4, 5 CLO 1, 2, 3, 4, 5 CLO 1, 2, 3, 4, 5 CLO 1, 2, 3, 4, 5			

CLO 5	understand the Black-Scholes model and option pricing theory

Offer in 2024 - 2025						
Grade Descriptors (A+ to F)	Α	learning outcomes. S	h mastery at an advanced level of extensive how strong analytical and critical abilities and a wide range of complex, familiar and un	logical thinking, with evidence of orig	ginal thought, and ability to	
	В	Demonstrate substat learning outcomes. S	ntial command of a broad range of knowledg show evidence of analytical and critical abilities situations. Apply effective organizational and p	and logical thinking, and ability to a		
	С	Demonstrate genera outcomes. Show evi	I but incomplete command of knowledge a dence of some analytical and critical abilities	nd skills required for attaining most and logical thinking, and ability to		
	D	Demonstrate partial Show evidence of so	pply moderately effective organizational and pr but limited command of knowledge and skills me coherent and logical thinking, but with limi	required for attaining some of the of ted analytical and critical abilities. Sl		
	Fail	Demonstrate little or of analytical and criti	roblems. Apply limited or barely effective orga no evidence of command of knowledge and s cal abilities, logical and coherent thinking. Sho sentational skills are minimally effective or ine	kills required for attaining the course w very little or no ability to apply kno		
Communication- ntensive Course	Y	organization and pro				
Course Type	-	based course				
Course Teaching	Activitie		Details		No. of Hours	
Learning Activities	Lectures				36	
	Tutorials				12 100	
Assessment Methods	Methods	/ Self study	Deteile	Meighting in final		
and Weighting	wethods	5	Details	Weighting in final course grade (%)	Assessment Methods to CLO Mapping	
	Examina	ation	One 3-hour written examination	on 40	CLO 1, 2, 3, 4, 5	
	Assignm		Coursework (assignme tutorials, and a class test)	80	CLO 1, 2, 3, 4, 5	
Required/recommended reading and online materials	John Hul Alison Et	I: Options, Futures heridge: A Course i	tives Markets (2nd edition), Chapters and Other Derivatives (2008, 7th edit n Financial Calculus (2002)	ion)		
Course Website		odle.hku.hk	Calculus for Finance II Continuous-Tir			
STAT3951	Topics	on advanced ac	tuarial modelling (6 credits)	Academic Yea	ar 2024	
Offering Department		& Actuarial Science		Quota		
Course Co-ordinator			ial Science (leedav@hku.hk)			
Feachers Involved		e,Statistics & Actua				
Course Objectives		/	vanced actuarial models and techniqu	ues used in the field of life an	d non-life insurance.	
Course Contents & Topics	guarante	es and options; equ	of transition intensities; graduation uity-linked life-contingent insurance p for non-life insurance portfolios.			
Course Learning Outcomes	On successful completion of this course, students should be able to: CLO 1 estimate age-dependent transition intensities					
	CLO 2 explain the concept of graduation and apply statistical tests for mortality table comparisons					
	CLO 3 apply the Esscher transform on probability distributions and stochastic processes CLO 4 price various equity-linked insurance products using Esscher transforms and risk-neutral methods					
	CLO 5 apply the extreme value theory on univariate data sets CLO 6 describe the properties of common copula models and apply such models to capture the dependence					
		tructures of differen	t risks n models and evaluate ruin probabiliti	es as well as related quantitie	28	
Pre-requisites			ly enrolled in this course; and			
(and Co-requisites and Impermissible combinations)		STAT3910, or alread Actuarial Science) :	ly enrolled in this course; and students only.			
Offer in 2024 - 2025	Y 2n	d sem Offer in 20	25 - 2026 : Y	Examination	May	
Grade Descriptors (A+ to F)	A Demonstrate thorough mastery at an advanced level of extensive knowledge and skills required for attaining all th learning outcomes. Show strong analytical and critical abilities and logical thinking, with evidence of original thought, and apply knowledge to a wide range of complex, familiar and unfamiliar situations. Apply highly effective organization.				inal thought, and ability to	
	presentational skills. B Demonstrate substantial command of a broad range of knowledge and skills required for attaining at least most of the course learning outcomes. Show evidence of analytical and critical abilities and logical thinking, and ability to apply knowledge to familiar					
	and some unfamiliar situations. Apply effective organizational and presentational skills. C Demonstrate general but incomplete command of knowledge and skills required for attaining most of the course learning outcomes. Show evidence of some analytical and critical abilities and logical thinking, and ability to apply knowledge to most					
	familiar situations. Apply moderately effective organizational and presentational skills. D Demonstrate partial but limited command of knowledge and skills required for attaining some of the course learning outcomes. Show evidence of some coherent and logical thinking, but with limited analytical and critical abilities. Show limited ability to apply					
	 Knowledge to solve problems. Apply limited or barely effective organizational and presentational skills. Fail Demonstrate little or no evidence of command of knowledge and skills required for attaining the course learning outcomes. Lack of analytical and critical abilities, logical and coherent thinking. Show very little or no ability to apply knowledge to solve problems. Organization and presentational skills are minimally effective or ineffective. 					
Communication- ntensive Course	N	organization and pre				
Course Type	Lecture-b	based course				
Course Teaching	Activitie	s	Details		No. of Hours	
& Learning Activities	Lectures				36	
- Louining Additioo	Tutorials				12	
Assessment Methods	Reading Methods	/ Self study	Details	Weighting in final	100 Assessment	

Course Website STAT3954 Offering Department Course Co-ordinator	Current t Statistics &	topics in actuaria & Actuarial Science	al science (6 credits)	Academic Year Quota	2024 	
STAT3954	Current	topics in actuaria	al science (6 credits)		2024	
Course Website	nup://mood					
Course Website	nup://mood					
	Brown, R. Insurance Segal, S. (L. and Lennox, W. S (4th Edition). ACTEX	S. (2015). Introduction to Ratemaking a	_		
Required/recommended reading and online materials						
	Presentation		Oral presentation, interim report and peer review	30	CLO 4, 5, 6, 7	
	Project rep	ports	Written report	30	CLO 4, 5, 6	
	Test		In-class quizzes, discussions and participation	40	to CLO Mapping CLO 1, 2, 3, 4, 5 6, 7, 8	
Assessment Methods and Weighting	Methods		Details	Weighting in final course grade (%)	Assessment Methods	
		Self study			12	
& Learning Activities	Lectures Tutorials				36 12	
Course Teaching	Activities	i	Details		No. of Hours	
Course Type	-	ased course				
Communication- ntensive Course	N					
	Fail	Demonstrate little or no of analytical and critical	olems. Apply limited or barely effective organizatio evidence of command of knowledge and skills re abilities, logical and coherent thinking. Show very entational skills are minimally effective or ineffecti	equired for attaining the course l		
	D	outcomes. Show evidence of some analytical and critical abilities and logical thinking, and ability to apply knowledge to most familiar situations. Apply moderately effective organizational and presentational skills. D Demonstrate partial but limited command of knowledge and skills required for attaining some of the course learning outcomes. Show evidence of some coherent and logical thinking, but with limited analytical and critical abilities. Show limited ability to apply knowledge to solve problems. Apply limited or barely effective organizational and presentational skills.				
	B	 learning outcomes. Show evidence of analytical and critical abilities and logical thinking, and ability to apply knowledge to familiar and some unfamiliar situations. Apply effective organizational and presentational skills. C Demonstrate general but incomplete command of knowledge and skills required for attaining most of the course learning 				
(A+ to F)		apply knowledge to a presentational skills.	w strong analytical and critical abilities and logical wide range of complex, familiar and unfamilia	r situations. Apply highly effec	tive organizational an	
Grade Descriptors	A	Demonstrate thorough	mastery at an advanced level of extensive kno	wledge and skills required for	attaining all the course	
combinations) Offer in 2024 - 2025	Y 1st s	sem Offer in 2025	- 2026 · V	Examination	No Exam	
(and Co-requisites and Impermissible						
Pre-requisites	Pass in ST	AT3901.				
	CLO 8 pre	· · · · · · · · · · · · · · · · · · ·	ional role as an Associate of the Society	y of Actuaries		
	CLO 7 ma	anage uncertainty by	l information and participate in peer revi responding to questions in ambiguous		with limited time to	
	CLO 5 pro	ovide context for the	specific mathematical and technical skil	lls developed in the basic	actuarial courses	
	pro	oviders or as a cons	ices across the traditional areas of pra ultant to those providers nontraditional and emerging areas of pr		ial security system	
Outcomes	ex	periences	escription of financial security systems, tices, principles, approaches, methods,		· · ·	
Course Learning	On succes	ocial security plans, retirement plans, investment funds and property and casualty insurance. In successful completion of this course, students should be able to:				
Course Contents & Topics	Actuary, E	xternal Forces, Risk applications to vario	view on selected materials relating to t t in Actuarial Problems, Design and Pri us financial security programmes includ	icing of Actuarial Solution ling individual life insurance	s. Emphasis will b	
Course Objectives	using the a	actuarial control cycl		· · ·		
Teachers Involved		at,Statistics & Actuar	,	vnance them to practical	raal world aituation	
Course Co-ordinator			ial Science (watkp@hku.hk)	Quotu		
STAT3953 Offering Department		entals of actuaria Actuarial Science	al practice (6 credits)	Academic Year Quota	2024	
Course Website		An Introduction to Sta	atistical Modeling of Extreme Values (Sp		- /	
reading and online materials	Actuaries, Denuit M.		rts M., Kaas R.: Actuarial Theory for Dep	pendent Risks (Wiley, 200	5)	
Required/recommended	U U		tutorials, and a class test) and Survival Analysis, Core Principle		6 ute and Faculty of	
	Assignme	on	Coursework (assignments,	25	6 CLO 1, 2, 3, 4, 5	
			One 3-hour written examination			

Course Objectives	basic cap	This course aims at providing practical elements for actuarial students including daily life actuarial practice and th basic capability to understand, research in and handle the laws as and when situations would arise, which wi benefit students in their coming future career.				
Course Contents & Topics	This cour		uding 1) Practical Actu	arial Practice and 2		
	Insurance	e, it covers the full and Experience Ana	ce: It covers the major practical topics picture of actuarial control cycle inclu alysis. For General Insurance, it covers th	uding Product Pricing,	Valuation, Financia	
	changes legal mat course, a	in the market for ba erials with heavy in longside with basic	This is the 7th year of the course and th sic legal and general insurance skills fo volvement of actuarial and other gener legal research skills and fundamental ance Industry would also infiltrate the cou	r actuaries. Intellectua al insurance expertise legal thinking. Sharing	Ily stimulating recer would dominate th	
Course Learning	On succe	ssful completion of th	his course, students should be able to:			
Outcomes	In	surance	anding regarding Actuarial Control Cycle			
			ence regarding fundamental actuarial prac		roject	
			tanding of the legal system in Hong Kong		1 1 1 1 1 1	
	to	ort	knowledge in certain core legal aspects	such as the law of cor	ntract and the law o	
			knowledge of the law of insurance			
		CLO 6 conduct elementary legal researches when facing with legal problems				
			elements of a routine judgment, the matri	x of the facts and the la	w involved	
Pre-requisites			enrolled in this course; or			
and Co-requisites			enrolled in this course; and			
and Impermissible	For BSC(A	Actuarial Science) st	udents only.			
combinations) Offer in 2024 - 2025	N Off	er in 2025 - 2026 : N		Examination		
Grade Descriptors	A				r attaining all the course	
(A+ to F)	^	Demonstrate thorough mastery at an advanced level of extensive knowledge and skills required for attaining all the cour learning outcomes. Show strong analytical and critical abilities and logical thinking, with evidence of original thought, and ability apply knowledge to a wide range of complex, familiar and unfamiliar situations. Apply highly effective organizational a presentational skills.				
	В	Demonstrate substantial command of a broad range of knowledge and skills required for attaining at least most of the cou learning outcomes. Show evidence of analytical and critical abilities and logical thinking, and ability to apply knowledge to fami and some unfamiliar situations. Apply effective organizational and presentational skills.				
	С	Demonstrate general but incomplete command of knowledge and skills required for attaining most of the course learnin outcomes. Show evidence of some analytical and critical abilities and logical thinking, and ability to apply knowledge to most familiar situations. Apply moderately effective organizational and presentational skills.				
					apply knowledge to mos	
	D	familiar situations. Appl Demonstrate partial bu Show evidence of som	ly moderately effective organizational and presentat tt limited command of knowledge and skills require e coherent and logical thinking, but with limited and	ional skills. ed for attaining some of the c alytical and critical abilities. Sh	apply knowledge to mos	
	D Fail	familiar situations. Appl Demonstrate partial bu Show evidence of som knowledge to solve pro Demonstrate little or no of analytical and critica	ly moderately effective organizational and presentat tt limited command of knowledge and skills require e coherent and logical thinking, but with limited ana blems. Apply limited or barely effective organization o evidence of command of knowledge and skills rer I abilities, logical and coherent thinking. Show very	ional skills. I for attaining some of the c slytical and critical abilities. Sh al and presentational skills. quired for attaining the course little or no ability to apply know	apply knowledge to mos ourse learning outcomes now limited ability to apply e learning outcomes. Lack	
		familiar situations. Appl Demonstrate partial bu Show evidence of som knowledge to solve pro Demonstrate little or no of analytical and critica	ly moderately effective organizational and presentat ti limited command of knowledge and skills require e coherent and logical thinking, but with limited ana bilems. Apply limited or barely effective organization o evidence of command of knowledge and skills req-	ional skills. I for attaining some of the c slytical and critical abilities. Sh al and presentational skills. quired for attaining the course little or no ability to apply know	apply knowledge to mos ourse learning outcomes now limited ability to apply e learning outcomes. Lacl	
ntensive Course	Fail N	familiar situations. Appl Demonstrate partial bu Show evidence of som knowledge to solve pro Demonstrate little or no of analytical and critica	ly moderately effective organizational and presentat tt limited command of knowledge and skills require e coherent and logical thinking, but with limited ana blems. Apply limited or barely effective organization o evidence of command of knowledge and skills rer I abilities, logical and coherent thinking. Show very	ional skills. I for attaining some of the c slytical and critical abilities. Sh al and presentational skills. quired for attaining the course little or no ability to apply know	apply knowledge to mos ourse learning outcomes now limited ability to apply e learning outcomes. Lac	
ntensive Course Course Type Course Teaching	Fail N	familiar situations. Appl Demonstrate partial bu Show evidence of som knowledge to solve pro Demonstrate little or no of analytical and critica Organization and prese ased course	ly moderately effective organizational and presentat tt limited command of knowledge and skills require e coherent and logical thinking, but with limited ana blems. Apply limited or barely effective organization o evidence of command of knowledge and skills rer I abilities, logical and coherent thinking. Show very	ional skills. I for attaining some of the c slytical and critical abilities. Sh al and presentational skills. quired for attaining the course little or no ability to apply know	apply knowledge to mos ourse learning outcomes now limited ability to apply e learning outcomes. Lac	
ntensive Course Course Type Course Teaching	Fail N Lecture-b Activities Lectures	familiar situations. Appl Demonstrate partial bu Show evidence of som knowledge to solve pro Demonstrate little or no of analytical and critica Organization and prese ased course	ly moderately effective organizational and presentat tt limited command of knowledge and skills require e coherent and logical thinking, but with limited ana blems. Apply limited or barely effective organization o evidence of command of knowledge and skills req l abilities, logical and coherent thinking. Show very entational skills are minimally effective or ineffective	ional skills. I for attaining some of the c slytical and critical abilities. Sh al and presentational skills. quired for attaining the course little or no ability to apply know	apply knowledge to mos nourse learning outcomes now limited ability to apply e learning outcomes. Lack wledge to solve problems No. of Hours 36	
ntensive Course Course Type Course Teaching	Fail N Lecture-b Activitie Lectures Tutorials	familiar situations. Appl Demonstrate partial bu Show evidence of som knowledge to solve pro Demonstrate little or no of analytical and critica Organization and prese ased course	ly moderately effective organizational and presentat tt limited command of knowledge and skills require e coherent and logical thinking, but with limited ana blems. Apply limited or barely effective organization o evidence of command of knowledge and skills req l abilities, logical and coherent thinking. Show very entational skills are minimally effective or ineffective	ional skills. I for attaining some of the c slytical and critical abilities. Sh al and presentational skills. quired for attaining the course little or no ability to apply know	apply knowledge to mos ourse learning outcomes now limited ability to apply e learning outcomes. Lack wledge to solve problems No. of Hours 36 12	
ntensive Course Course Type Course Teaching & Learning Activities	Fail N Lecture-b Activitie Lectures Tutorials	familiar situations. Appl Demonstrate partial bu Show evidence of som knowledge to solve pro Demonstrate little or no of analytical and critica Organization and prese ased course	ly moderately effective organizational and presentat t limited command of knowledge and skills require e coherent and logical thinking, but with limited ana blems. Apply limited or barely effective organization o evidence of command of knowledge and skills rer l abilities, logical and coherent thinking. Show very entational skills are minimally effective or ineffective Details	ional skills. I for attaining some of the c slytical and critical abilities. Sh al and presentational skills. quired for attaining the course little or no ability to apply know	apply knowledge to mos ourse learning outcomes now limited ability to appl e learning outcomes. Lac wledge to solve problems No. of Hours 36	
intensive Course Course Type Course Teaching & Learning Activities Assessment Methods	Fail N Lecture-b Activitie Lectures Tutorials	familiar situations. Appl Demonstrate partial bu Show evidence of som knowledge to solve pro Demonstrate little or no of analytical and critica Organization and prese ased course S	ly moderately effective organizational and presental ti limited command of knowledge and skills require e coherent and logical thinking, but with limited ana iblems. Apply limited or barely effective organization o evidence of command of knowledge and skills ref abilities, logical and coherent thinking. Show very entational skills are minimally effective or ineffective Details	ional skills. I for attaining some of the c slytical and critical abilities. Sh al and presentational skills. quired for attaining the course little or no ability to apply know	apply knowledge to most ourse learning outcomes now limited ability to appl e learning outcomes. Lac wledge to solve problems No. of Hours 36 12 100 Assessment Methods to CLO Mapping	
Communication- intensive Course Course Type Course Teaching & Learning Activities Assessment Methods and Weighting	Fail N Lecture-b Activitie Lectures Tutorials Reading	familiar situations. Appl Demonstrate partial bu Show evidence of som knowledge to solve pro Demonstrate little or no of analytical and critica Organization and prese ased course S / Self study	ly moderately effective organizational and presentat t limited command of knowledge and skills require e coherent and logical thinking, but with limited ana blems. Apply limited or barely effective organization o evidence of command of knowledge and skills rer l abilities, logical and coherent thinking. Show very entational skills are minimally effective or ineffective Details	ional skills. Id for attaining some of the c lytical and critical abilities. Sf al and presentational skills. quired for attaining the course little or no ability to apply know Weighting in final	Apply knowledge to most ourse learning outcomes how limited ability to apply e learning outcomes. Lack wledge to solve problems No. of Hours 36 12 100 Assessment	

STAT3956	Life contingencies III (6 credits) Academic Year 2024					
Offering Department	Statistics & Actuarial Science	Quota				
Course Co-ordinator	Prof T Boonen, Statistics & Actuarial Science (tjboonen@hku.hk)					
Teachers Involved	(Prof T Boonen, Statistics & Actuarial Science)					
Course Objectives	This course covers concepts and methods in life contingencies that are used in term actuarial plans and products.	n the valuation and	I financing of long-			
Course Contents & Topics	The following topics will be covered: Fundamentals of pension plans; pricin obligations; universal life insurance; options that are embedded in life insurance					
Course Learning	On successful completion of this course, students should be able to:					
Outcomes	CLO 1 calculate the pension benefits in accordance with the provisions of a pension plan					
	CLO 2 perform pension valuation and funding calculations					
	CLO 3 describe the key features of universal life insurance and perform profit tests					
	CLO 4 define and calculate payoffs under various options embedded in insurance and annuity contracts					
	CLO 5 value the guaranteed minimum death benefit and the guaranteed minimum accumulation/maturity benefit using the Black-Scholes model					
	CLO 6 comment on the risk management of various options embedded in insurance products					
Pre-requisites	Pass in STAT3909; and					
(and Co-requisites and Impermissible combinations)	For BSc(Actuarial Science) students only.					
Offer in 2024 - 2025	Y 1st sem Offer in 2025 - 2026 : Y	Examination	Dec			

Grade Descriptors (A+ to F)	A	learning outcomes. Show str apply knowledge to a wide presentational skills.	tery at an advanced level of extensive kno ong analytical and critical abilities and logica e range of complex, familiar and unfamilia	l thinking, w ar situations	ith evidence of origin Apply highly effect	nal thought, and ability to ctive organizational and
	B Demonstrate substantial command of a broad range of knowledge and skills required for attaining at least most of the course learning outcomes. Show evidence of analytical and critical abilities and logical thinking, and ability to apply knowledge to familiar and some unfamiliar situations. Apply effective organizational and presentational skills.					
	C	Demonstrate general but in outcomes. Show evidence of	ncomplete command of knowledge and sk of some analytical and critical abilities and	ills required logical think	l for attaining most ing, and ability to a	of the course learning pply knowledge to most
	D	Demonstrate partial but limit Show evidence of some coh	derately effective organizational and present ted command of knowledge and skills requi erent and logical thinking, but with limited ar s. Apply limited or barely effective organizatio	red for attain nalytical and	ning some of the co critical abilities. Sho	
	Fail	Demonstrate little or no evid of analytical and critical abilit	ence of command of knowledge and skills r lies, logical and coherent thinking. Show ver onal skills are minimally effective or ineffectiv	equired for a / little or no	attaining the course	
Communication- intensive Course	N					
Course Type Course Teaching	Lecture-ba	ased course	Details			No. of Hours
& Learning Activities	Lectures	2				36
	Tutorials	Self study				12
Assessment Methods	Methods	Sell study	Details	Weial	nting in final	100 Assessment
and Weighting				0	se grade (%)	Methods to CLO Mapping
	Examinat	ion	One 3-hour written examination		75	CLO 1, 2, 3, 4, 5, 6
	Assignme	ents	Coursework (assignments, tutorials, and a class test)		25	CLO 1, 2, 3, 4, 5, 6
Required/recommended reading and online materials	University Anderson,	Press, 2020, 3rd edition A.W., Pension Mathema	nd Waters, H.R.: Actuarial Mather) atics for Actuaries (ACTEX Publicati		Ū	t Risks (Cambridge
Course Website	http://moo	dle.hku.hk				
STAT4711		e experience for act	tuarial science undergraduat	es (6	Academic Year	. 2024
Offering Department	credits)	& Actuarial Science			Quete	
Offering Department Course Co-ordinator			arial Science (ugenq@hku.hk)		Quota	50
Teachers Involved	(Various te	eachers as the assessors	s of oral presentations and written re			
Course Objectives	problems years. It a students	in actuarial science by ir aims to help the student	provide students with capstone exp tegrating and applying actuarial the s to establish a good and solid for experience in solving practical p tation of the results	eories and undation o	techniques lear of self-learning s	nt in their university skills, and to enable
Course Contents & Topics	No formal teaching will be given for this course. Students are expected to devote 120-140 hours working on this project. Students will work in groups of three to five under the supervision of a teacher and/or an industry supervisor. Students are required to give a presentation on their work two to three weeks before the end of the semester, and submit their final report at the end of the semester.					
	Topics acceptable for projects in this course can be related to any of the traditional actuarial areas of practice such as life insurance, pension, finance, investment, enterprise risk management and general insurance. Students are also encouraged to suggest topics in non-traditional actuarial areas provided they can find a suitable teacher and/or industry supervisor. All topics for this course will be subject to final approval by the Department to ensure relevance to actuarial science.					
	activities r	elated to the topic, and r	the topic for a practical project, nake suggestion on a solution of the			
Course Learning Outcomes	On successful completion of this course, students should be able to: CLO 1 define a practical problem, discuss the issues faced by different stakeholders, and design workable solutions for the problems					
	CLO 2 integrate theoretical results and practical approaches, and to specify limitations of current developments CLO 3 work in a team and to collaborate with members with different background					
	CLO 4 deliver actuarial results effectively in a written report and in oral presentations CLO 5 develop further logical, critical thinking, creativity, technical report writing, communication and consultation skills					
	CLO 6 ex		I audience the approaches of act	uarial sci	ence as applied	to problems in a
Pre-requisites	Pass in a	at least 24 credits of	advanced level disciplinary core/		courses in BSc	(Actuarial Science
(and Co-requisites and Impermissible combinations)	Pass in S This caps	TAT3909, or already enro tone course is only for	T3901, or already enrolled in this of olled in this course); and BSc(Actuarial Science) students, a		tually exclusive	with STAT4767 and
	STAT4798 The earlie		ed to take this capstone course is th	neir year 3	3 study.	
Offer in 2024 - 2025 Grade Descriptors	Y 1st	sem 2nd sem Offer i	n 2025 - 2026 : Y		Examination	No Exam
Grade Descriptors (A+ to F)	A	learning outcomes. Show str apply knowledge to a wide presentational skills.	tery at an advanced level of extensive kno ong analytical and critical abilities and logica a range of complex, familiar and unfamilia	l thinking, w ar situations	ith evidence of origin Apply highly effect	nal thought, and ability to ctive organizational and
	В	learning outcomes. Show ev and some unfamiliar situation	nmand of a broad range of knowledge and idence of analytical and critical abilities and ns. Apply effective organizational and preser	logical thinki tational skill	ing, and ability to app s.	oly knowledge to familiar
	С	outcomes. Show evidence of	ncomplete command of knowledge and sk of some analytical and critical abilities and	logical think	ing, and ability to a	pply knowledge to most

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	Research report	written report	50	to CLO Mapping CLO 1, 2, 3, 4, 5			
Assessment Methods and Weighting	Methods	Details	Weighting in final course grade (%)	Assessment Methods			
Course Teaching & Learning Activities	Activities Reading / Self study	Details Tutorials, group work/project, readir	Details Tutorials, group work/project, reading/self-study				
Course Type	Project-based course			No. of Hours			
Communication- intensive Course	Ν						
	of analytical and criti	Demonstrate little or no evidence of command of knowledge and skills required for attaining the course learning outcomes. Lack of analytical and critical abilities, logical and coherent thinking. Show very little or no ability to apply knowledge to solve problems. Organization and presentational skills are minimally effective or ineffective.					
	Show evidence of so knowledge to solve p	but limited command of knowledge and skills require ome coherent and logical thinking, but with limited and problems. Apply limited or barely effective organization	alytical and critical abilities. Sh nal and presentational skills.	now limited ability to apply			
		oply moderately effective organizational and presenta					

STAT4767	Actuarial s	science interns	hip (6 credits)	Academic Year	r 2024		
Offering Department	Statistics & A	Actuarial Science	· · ·	Quota			
Course Co-ordinator			al Science (ericli11@hku.hk)				
Teachers Involved	(Various tea	/arious teachers as the assessors of oral presentations and written reports, Statistics & Actuarial Science)					
Course Objectives	This course	his course is offered to actuarial science students who take on a 6-month full time or similar internships. The					
		bjective is for a student to complete this course as a project based on his/her internship.					
Course Contents & Topics	encountered that the stud	by the student du	itten report which should emphasize ring his/her internship. In many situatio plved in during his/her internship. The e workplace.	ns, this would mean a re	port of the project(s		
Course Learning	On successf	ul completion of thi	s course, students should be able to:				
Outcomes	CLO 1 gair	n practical experien	ces during internship				
	CLO 2 des	cribe basic actuaria	al practices learned during the internshi	p in a written report			
	CLO 3 exp	lain how actuarial t	heories learned in University can be ap	plied in practice in a writte	en report		
	CLO 4 suc	cessfully resolve co	onflicts in the workplace through oral ne	gotiation strategies			
	CLO 5 effe	ctively communica	te in the workplace through email				
Pre-requisites	Pass in at	least 24 credits	of advanced level disciplinary core/e	elective courses in BSo	c(Actuarial Science		
(and Co-requisites and Impermissible combinations)	This capstor		1; and r BSc(Actuarial Science) students; and owed to take this capstone course is th		stat4711.		
Offer in 2024 - 2025			er in 2025 - 2026 : Y	Examination	No Exam		
Grade Descriptors Distinction/Pass/Fail	Pass	or assigned by supervisor(s). Establishes effective collaboration and communication with supervisor(s), colleagues, and clients in the job. Successfully fulfills the requirements set out in the Course Description regarding working hours, written and oral					
	 report, and evaluation by supervisor(s), etc. Students demonstrating excellent performance in the above would be awarded a grade of "Distinction". Fail Very limited or no ability to solve problems in the workplace. Fails to handle or carry out the work required in the job or assigned by supervisor(s). Fails to establish effective collaboration or communication with supervisor(s), other colleagues, or clients in the job. Fails to satisfy the requirements set out in the Course Description regarding working hours, written and oral report, or evaluation by supervisor(s), etc. 						
Communication-	Y						
intensive Course							
Course Type	Internship						
Course Teaching	Activities		Details	Details			
& Learning Activities	Internship w	vork	it is expected that students are to work at least 6 months or 120 working days		960		
Assessment Methods and Weighting	Methods		Details	Weighting in final course grade (%)	Assessment Methods to CLO Mapping		
	Written repo	ort	written report	30	CLO 1, 2, 3		
	Oral presentation		oral presentation and workshop on effective communications	70	CLO 1, 2, 3, 4, 5		
Course Website	http://moodle	e.hku.hk					
Additional Course Information	employer/dir Satisfactory be recorded interested to Enrolment o	http://moodle.hku.hk Despite no weighting for this assessment component, the completion of the employer's evaluation form by the employer/direct supervisor is required for passing the course. Satisfactory completion of this course can be counted towards the Capstone requirement. Details of internship will be recorded on the student's transcript. This course will be assessed on "Pass/Fail" basis. Students who are interested to enrol in this course should contact the Department to obtain the approval. Enrolment of this course is not conducted via the online course selection system and should be made through the relevant Department/School office after approval has been obtained from the course coordinator.					

STAT4798	Statistics and actuarial science project (6 credits)	Academic Year	2024			
Offering Department	Statistics & Actuarial Science	Quota	50			
Course Co-ordinator	Prof S M S Lee, Statistics & Actuarial Science (smslee@hku.hk)					
Teachers Involved	Various teachers as the assessors of oral presentations and written reports, Statistics & Actuarial Science)					

Course Objectives	Each year a few projects suitable for Actuarial Science students will be offered to provide students with practical experience in approaching a real problem, in report writing and in oral presentation.					
Course Contents & Topics	These projects, under the supervision of individual staff members, involve the applications of statistics and/o probability in a wide range of problems of practical and/or academic interests.					
Course Learning	On successful completion of this course, students should be able to:					
Outcomes		ormulate meaningful re				
			ed techniques in probability and/or st		roblems	
		•	t research findings in a professional m			
Pre-requisites (and Co-requisites and Impermissible combinations)	Pass in at least 24 credits of advanced level disciplinary core/elective courses in BSc(Actuarial Science) programme including STAT3902 and STAT3907; and Pass or already enrolled in at least one of the following courses: STAT3911, STAT4602, STAT4904; and This capstone course is only for BSc(Actuarial Science) students; and subject to the consent of course coordinator. This course is mutually exclusive with STAT4711.					
0.000 0000 0000			wed to take this capstone course is th			
Offer in 2024 - 2025		sem 2nd sem Offe		Examination	No Exam	
Grade Descriptors (A+ to F)	Α	original thought. Insightful to quote/reference aptly.	asp of the subject. Show strong analytical ar use and critical analysis / evaluation of inform Critical use of data and results to draw appro- tational skills. [Work of A+ should show consi .]	ation drawn from a full range o opriate and insightful conclusio	f high quality sources and ns. Apply highly effective	
	В	Demonstrate substantial grasp of the subject. Evidence of analytical and critical abilities and logical thinking. Critical use of relevant information from sources, showing ability to make meaningful comparisons between different secondary interpretations and to quote/reference aptly. Correct use of data of results to draw appropriate conclusions. Apply effective organizational and presentational skills.				
	С	Demonstrate general but incomplete grasp of the subject. Evidence of some analytical and critical abilities and logical thinking. Use of relevant information from sources, showing ability to make comparisons between different interpretations and to quote/reference aptly. Mostly correct but some erroneous use of data and results to draw appropriate conclusions. Apply moderately effective organizational and presentational skills.				
	D	Demonstrate partial but limited grasp, with retention of some relevant information, of the subject. Evidence of some coherent and logical thinking, but with limited analytical and critical abilities. Demonstrate use and reference of several sources, but mainly through summary rather than analysis and comparison. Limited ability to use data and results to draw appropriate conclusions. Apply limited or barely effective organizational and presentational skills.				
	Fail	Demonstrate evidence of analytical and critical abil	little or no grasp of the knowledge and und littles, logical and coherent thinking. Limited u d results and/or unable to draw appropriate	se of secondary sources and	no critical comparison o	
Communication- intensive Course	N					
Course Type	Project-ba	sed course				
Course Teaching	Activities	5	Details		No. of Hours	
& Learning Activities	Reading /	Self study			120	
Assessment Methods and Weighting	Methods		Details	Weighting in final course grade (%)	Assessment Methods to CLO Mapping	
	Research	report	written report	60	CLO 1, 2, 3	
	Oral pres	•	oral presentation & in-class discussion	40	CLO 1, 2, 3	
Course Website	http://moo	dle.hku.hk				
Additional Course		s subject to past acade	emic performance.			

STAT4901	Risk th	eory II (6 credits)	Academic Yea	r 2024			
Offering Department	Statistics	Statistics & Actuarial Science Quota					
Course Co-ordinator	TBC, Sta	TBC, Statistics & Actuarial Science (ugenq@hku.hk)					
Teachers Involved							
Course Objectives		rse is an advanced course in risk theory which exten ory, ruin theory, aggregate claims process, and relate		AT3906. It discusses			
Course Contents & Topics	coefficier Poisson	eory; discrete ruin model; compound Poisson ri nt; Lundbergs inequality; Tijms approximation; non- process; inflation model; IBNR (Incurred But Not R s; equilibrium distributions.	homogeneous birth process; con	agion model; mixed			
Course Learning	On succe	essful completion of this course, students should be	able to:				
Outcomes		nderstand utility theory including some commonly und utility maximization	ised utility functions, Jensens inec	quality, risk aversion			
	CLO 2 d	efine discrete and continuous ruin models					
	CLO 3 calculate the adjustment coefficient, Lundbergs inequality and Tijms approximation in ruin theory						
	CLO 4 understand the effect of reinsurance and change of parameters on ruin probability						
	CLO 5 understand non-homogeneous birth process and its applications as contagion models for c						
	CLO 6 u	nderstand mixed Poisson process and its application	ns including the inflation model and	the IBNR model			
	CLO 7 d	erive the relationship between stop-loss moments a	nd equilibrium distributions				
Pre-requisites (and Co-requisites and Impermissible combinations)	Pass in S	STAT3906					
Offer in 2024 - 2025	N Of	fer in 2025 - 2026 : N	Examination				
Grade Descriptors (A+ to F)	A	Demonstrate thorough mastery at an advanced level of ext learning outcomes. Show strong analytical and critical abilities apply knowledge to a wide range of complex, familiar an presentational skills.	and logical thinking, with evidence of origi	nal thought, and ability to			
	В	Demonstrate substantial command of a broad range of know learning outcomes. Show evidence of analytical and critical at and some unfamiliar situations. Apply effective organizational	pilities and logical thinking, and ability to ap				
	С	Demonstrate general but incomplete command of knowled outcomes. Show evidence of some analytical and critical ab familiar situations. Apply moderately effective organizational a	ge and skills required for attaining mos ilities and logical thinking, and ability to a				

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	- 5	Demonstrate partial but limited command of knowledge and skills required for attaining some of the course learning outcomes. Show evidence of some coherent and logical thinking, but with limited analytical and critical abilities. Show limited ability to apply knowledge to solve problems. Apply limited or barely effective organizational and presentational skills.			
	c	Demonstrate little or no evidence of command of knowledge and skills required for attaining the course learning outcomes. Lack of analytical and critical abilities, logical and coherent thinking. Show very little or no ability to apply knowledge to solve problems. Organization and presentational skills are minimally effective or ineffective.			
Communication- intensive Course	Ν				
Course Type	Lecture-base	ed course			
Course Teaching	Activities		Details		No. of Hours
& Learning Activities	Lectures				36
	Tutorials				12
	Reading / S	elf study			100
Assessment Methods and Weighting	Methods		Details	Weighting in final course grade (%)	Assessment Methods to CLO Mapping
	Examinatior	ı	One 3-hour written examination	75	CLO 1, 2, 3, 4, 5, 6
	Assignment	S	Coursework (assignments, tutorials, and a class test)	25	CLO 1, 2, 3, 4, 5, 6
Required/recommended reading and online materials	 Klugman S.A., Panjer H.H., & Willmot G.E.: Loss Models: From Data to Decisions (John Wiley & Sons, 2007, 3rd edition). Kaas R., Goovaerts M., Dhaene J., & Denuit M.: Modern Actuarial Risk Theory (Springer, 2004, 1st edition). Bowers N.L., Gerber H.U., Hickman J.C. & Jones D.A.: Actuarial Mathematics (Society of Actuaries, 1997, 2nd edition). Willmot G.E. & Lin X.S.: Lundberg Approximations for Compound Distributions with Insurance Applications (Springer, 2000, 1st edition). 				
Course Website	http://moodle	e.hku.hk			
STAT4902	Selected topics in actuarial science (6 credits) Academic Year 2024			r 2024	

STAT4902	Selected	d topics in actuar	ial science (6 credits)	Academic Year	2024	
Offering Department	Statistics & Actuarial Science Quota			Quota		
Course Co-ordinator	TBC, Statistics & Actuarial Science (ugenq@hku.hk)					
Teachers Involved						
Course Objectives		will find useful. It foc	ourse in actuarial science which uses on tools that are in the front			
Course Contents & Topics	Enterprise	e risk management; F	om the following topics: Risk identification and taxonomy; insurance; Other topics as deterr		Applications to ris	
Course Learning	On succes	ssful completion of th	is course, students should be abl	e to:		
Outcomes	CLO 1	risks				
	CLO 2	understand and	apply copula to model risk depend	dence		
	CLO 3	understand and	apply extreme value theory			
	CLO 4	explain approach	nes for managing risks			
Pre-requisites (and Co-requisites and Impermissible combinations)	Pass in S	TAT3906				
Offer in 2024 - 2025	N Off	er in 2025 - 2026 : N		Examination		
Grade Descriptors (A+ to F)	A Demonstrate thorough mastery at an advanced level of extensive knowledge and skills required for attaining all the learning outcomes. Show strong analytical and critical abilities and logical thinking, with evidence of original thought, and apply knowledge to a wide range of complex, familiar and unfamiliar situations. Apply highly effective organization presentational skills.				al thought, and ability to	
	В	Demonstrate substantial command of a broad range of knowledge and skills required for attaining at least most of the cours learning outcomes. Show evidence of analytical and critical abilities and logical thinking, and ability to apply knowledge to familia and some unfamiliar situations. Apply effective organizational and presentational skills.				
	С	Demonstrate general but incomplete command of knowledge and skills required for attaining most of the course learning outcomes. Show evidence of some analytical and critical abilities and logical thinking, and ability to apply knowledge to most familiar situations. Apply moderately effective organizational and presentational skills.				
	D	Demonstrate partial but limited command of knowledge and skills required for attaining some of the course learning outcomes Show evidence of some coherent and logical thinking, but with limited analytical and critical abilities. Show limited ability to appl knowledge to solve problems. Apply limited or barely effective organizational and presentational skills.				
	Fail	Demonstrate little or no evidence of command of knowledge and skills required for attaining the course learning outcomes. Lac of analytical and critical abilities, logical and coherent thinking. Show very little or no ability to apply knowledge to solve problem Organization and presentational skills are minimally effective or ineffective.				
Communication-	Y	· • ·	-			
intensive Course						
Course Type	Lecture-ba	ased course				
Course Teaching	Activities	6	Details		No. of Hours	
& Learning Activities	Lectures				36	
	Tutorials				12	
	Reading	Self study			100	
Assessment Methods and Weighting	Methods		Details	Weighting in final course grade (%)	Assessment Methods to CLO Mapping	
	Test		Midterm	45	CLO 1, 2, 3, 4	
	Assignme	ents	3 assignments	15	CLO 1, 2, 3, 4	
	Project re	ports	Written report	20	CLO 3, 4	
	Presenta	tion	Oral presentation	20	CLO 3, 4	
Required/recommended reading and online materials	- Actuaria	Theory for Depende	nagement, Sweeting P., (Cambrid nt Risks, Denuit M., Dhaene J., G Klugman S.A., Panjer H.H., Willr	Soovaerts M., Kaas R., (Wiley, 20	05, 1st edition)	

Course Website	http://moo					
STAT4903			neral insurance (6 credits)	Academic Year	2024	
Offering Department	Statistics & Actuarial Science Quota					
Course Co-ordinator	Dr D Lee, Statistics & Actuarial Science (leedav@hku.hk)					
eachers Involved Course Objectives	· · · · ·	(Dr D Lee,Statistics & Actuarial Science) The purpose of this course is to develop knowledge of the basic techniques for ratemaking and estimating cl				
	liabilities for emphasize Students v calculation	The purpose of this course is to develop knowledge of the basic techniques for ratemaking and estimating cla liabilities for general insurance. Application of the actuarial techniques to resolve general insurance problems will emphasized. The course also provides general knowledge on the general insurance market in Hong Ko Students will acquire the fundamental concept on general insurance actuarial science together with the support calculations				
Course Contents Topics	- Introduc	Il insurance market in Ho tion of general insurance ons on general insurance	e markets			
	 Techniqu Techniqu Techniqu Techniqu Calculate Pure pression Loss rational construction 	echniques for ratemakin ues related to exposures ues related to premiums ues related to loss and lo e the underwriting exper mium methods io methods rations when selecting t	oss adjustment expenses nse provisions			
	 Data req Build and Expected Frequent Bornhued 	ting claim liabilities juirement d analyze claim develop d claims method cy-severity methods tter-Ferguson and Benk al and validation of the e	tander methods			
Course Learning	On succes	sful completion of this c	ourse, students should be able to:			
Outcomes	CLO 2 us		underlying risks of general insuranc les to adjust premium, exposure		ise in ratemakii	
		•	e for basic general insurance produc es for general insurance products	ts		
Pre-requisites and Co-requisites and Impermissible combinations)	Pass in S1	AT3906, or already enro	olled in this course.			
Offer in 2024 - 2025	Y 1st	sem Offer in 2025 - 20	026 : Y	Examination	Dec	
arade Descriptors (A+ to F)	A	learning outcomes. Show str	tery at an advanced level of extensive kno- rong analytical and critical abilities and logica e range of complex, familiar and unfamilia	I thinking, with evidence of origina	al thought, and ability	
	 B Demonstrate substantial command of a broad range of knowledge and skills required for attaining at least most of the course learning outcomes. Show evidence of analytical and critical abilities and logical thinking, and ability to apply knowledge to familiand some unfamiliar situations. Apply effective organizational and presentational skills. C Demonstrate general but incomplete command of knowledge and skills required for attaining most of the course learning outcomes. Show evidence of some analytical and critical abilities and logical thinking, and ability to apply knowledge to familiar situations. 					
	outcomes. Show evidence of some analytical and critical abilities and logical thinking, and ability to apply knowledge to most familiar situations. Apply moderately effective organizational and presentational skills. D Demonstrate partial but limited command of knowledge and skills required for attaining some of the course learning outcomes.					
	 Show evidence of some coherent and logical thinking, but with limited analytical and critical abilities. Show limited ability to appl knowledge to solve problems. Apply limited or barely effective organizational and presentational skills. Fail Demonstrate little or no evidence of command of knowledge and skills required for attaining the course learning outcomes. Lac of analytical and critical abilities, logical and coherent thinking. Show very little or no ability to apply knowledge to solve problems 					
Communication-	N	Jorganization and presentation	onal skills are minimally enective of ineffectiv	с		
ntensive Course						
Course Type		ased course	Detelle			
ourse Teaching	Activities	•	Details No		No. of Hours	
Loanning Activities	Lectures Tutorials				36 12	
		Self study			12	
ssessment Methods	Methods	con olday	Details	Weighting in final	Assessment	
nd Weighting				course grade (%)	Methods to CLO Mappin	
	Examinati Assignme		One 3-hour written examination Coursework (assignments, tutorials, and a class test)	75 25	CLO 2, 3 CLO 1, 2, 3	
Required/recommended	Friedland	J.F. Estimating Unpaid	I Claims Using Basic Techniques, (Casualty Actuarial Society	Third Version	
eading and nline materials	2010 Werner, G Brown, R	, and Modlin, C., Basic F	Ratemaking, Casualty Actuarial Soc Introduction to Ratemaking and	iety, Fifth Edition, May 2016	3	
Course Website	http://moo					
	1					
STAT4904	Statistic	al learning for risk r	nodelling (6 credits)	Academic Year	2024	

31A14904	Statistical learning for risk modeling (6 credits)	Academic Tear	2024
Offering Department	Statistics & Actuarial Science	Quota	
Course Co-ordinator	Dr A Lo Statistics & Actuarial Science (amb10@hku hk)		

Teachers Involved	(Dr A Lo, Statistics & Actuarial Sc	ence)				
Course Objectives	To make sense of the vast and complex data sets that have emerged in insurance and finance, it is essential to					
	have a firm understanding of the basic statistical modelling and prediction techniques. This course introduces some useful predictive analytics techniques, such as principal component analysis, naive Bayes classification, decision tree models, and cluster analysis. The R programming language will be used for actual implementation.					
Course Contents	Basics of statistical learning, cross-validation, linear model selection and regularization (subset selection, shrinkage					
& Topics	methods, dimensional reduction methods), tree-based methods (decision trees, bagging, boosting, random forests) principal component analysis, naive Bayes classification, cluster analysis (K-means clustering, hierarchica clustering), deep learning, survival analysis, multiple testing.					
Course Learning	•/ •	course, students should be able to:				
Outcomes		wide range of predictive analytics tec				
		using the R programming language a				
Pre-requisites	Pass in STAT3907 or STAT3600	the characteristics, strengths and we	aknesses of different met	nods		
(and Co-requisites and Impermissible combinations)		d in STAT3612, or already enrolled in	this course; and			
Offer in 2024 - 2025	Y 2nd sem Offer in 2025 -	2026 : Y	Examination	May		
Grade Descriptors (A+ to F)	learning outcomes. Show	stery at an advanced level of extensive kno trong analytical and critical abilities and logical de range of complex, familiar and unfamilia	thinking, with evidence of origin	al thought, and ability to		
	B Demonstrate substantial of learning outcomes. Show	ommand of a broad range of knowledge and evidence of analytical and critical abilities and lu ons. Apply effective organizational and present	ogical thinking, and ability to app			
	C Demonstrate general but outcomes. Show evidence	incomplete command of knowledge and ski of some analytical and critical abilities and I oderately effective organizational and presenta	lls required for attaining most ogical thinking, and ability to a			
	D Demonstrate partial but lin Show evidence of some co	hited command of knowledge and skills requir herent and logical thinking, but with limited an ms. Apply limited or barely effective organizatio	ed for attaining some of the co alytical and critical abilities. Sho			
	Fail Demonstrate little or no ev of analytical and critical ab	idence of command of knowledge and skills re ilities, logical and coherent thinking. Show very tional skills are minimally effective or ineffective	quired for attaining the course l little or no ability to apply know			
Communication-	N					
intensive Course						
Course Type Course Teaching	Lecture-based course Activities	Details		No. of Hours		
& Learning Activities	Lectures	Details		36		
	Tutorials			12		
	Reading / Self study			100		
Assessment Methods	Methods	Details	Weighting in final	Assessment		
and Weighting			course grade (%)	Methods to CLO Mapping		
	Examination	One 2-hour written examination	75	CLO 1, 2, 3		
	Assignments	Coursework (assignments, class test(s) and computer-based project(s))	25	CLO 1, 2, 3		
Required/recommended reading and online materials	An Introduction to Statistical Lea Springer	rning, with Applications in R, James	, Witten, Hastie, Tibshira	ni, 2021, New York		
Course Website	http://moodle.hku.hk					
STAT7609	Research methods in stati	stics (6 credits)	Academic Year	2024		
Offering Department	Statistics & Actuarial Science		Quota			
Course Co-ordinator	Prof K Zhu, Statistics & Actuarial					
Teachers Involved Course Objectives		tistical concepts and methods which rch degree in statistics. Focus is				
Course Contents	Contents may be selected from:	•				
& Topics		modes of convergence; stochastic		mbers; central limi		
		rth expansions; saddlepoint approxim c likelihood methods: high-order appr		and its variants		
	signed likelihood ratio statistics;			ou anu its variants		
		nference: sample quantiles; sign a	and rank tests; Kolmog	jorov-Smirnov test		
	nonparametric regression; density estimation; kernel methods. (4) Computationally-intensive methods: cross-validation; bootstrap; permutation methods.					
	(4) Computationally-intensive methods: cross-validation; bootstrap; permutation methods. (5) Robust methods: measures of robustness; M-estimator; L-estimator; R-estimator; estimating functions.					
	(6) U-statistics, projection metho		r, recommender, commening	Turiotiono.		
	(7) Other topics as determined by	/ the instructor.				
Course Learning		course, students should be able to:				
Outcomes		age and technicalities found in statistic				
	CLO 2 understand the use of standard mathematical tools for conducting statistical research CLO 3 apply a variety of research tools to solve standard statistical problems					
		me developments in contemporary sta	atistical research			
Pre-requisites (and Co-requisites and Impermissible	Pass in STAT3600 or STAT3907					
combinations) Offer in 2024 - 2025	Y 1st sem Offer in 2025 - 2	026 · Y	Examination	Dec		

Department of Statistics & Actuarial Science

Grade Descriptors (A+ to F)	A	learning outcomes. Show strong analytical and critical abilities and logical thinking, with evidence of original thought, and a apply knowledge to a wide range of complex, familiar and unfamiliar situations. Apply highly effective organization presentational skills.				
	В	learning outcomes. Sh and some unfamiliar si	ow evidence of analytical and critical abilities and lo ituations. Apply effective organizational and present	ogical thinking, and ability to ap ational skills.	oply knowledge to familia	
	С	outcomes. Show evide	but incomplete command of knowledge and skil ence of some analytical and critical abilities and lo ly moderately effective organizational and presental	ogical thinking, and ability to a		
	D	Demonstrate partial be Show evidence of som	ut limited command of knowledge and skills require ne coherent and logical thinking, but with limited and oblems. Apply limited or barely effective organization	ed for attaining some of the co alytical and critical abilities. Sh		
	Fail	Demonstrate little or n of analytical and critica	o evidence of command of knowledge and skills re al abilities, logical and coherent thinking. Show very entational skills are minimally effective or ineffective	quired for attaining the course little or no ability to apply know		
Communication- intensive Course	N					
Course Type		ased course	Detelle		No. of Llouis	
Course Teaching & Learning Activities	Activities Lectures	5	Details		No. of Hours 36	
	Tutorials				12	
	Reading	/ Self study			100	
Assessment Methods and Weighting	Methods		Details	Weighting in final course grade (%)	Assessment Methods to CLO Mapping	
	Examinat	tion	One 2-hour written examination	60	CLO 1, 2, 3, 4	
	Assignme		Coursework (assignments, tutorials, and a class test)	40	CLO 1, 2, 3, 4	
Required/recommended reading and online materials	Owen, A.E Shao, J. (3. (2001). Empirical 1999). Mathematica	(1993). An Introduction to the Bootstrap. (Likelihood. Chapman & Hall: Boca Raton I Statistics. Springer: New York. Statistics. Cambridge: Cambridge Univers		ork.	
Course Website		dle.hku.hk		,		
STAT7610	Advance	ed probability (6	credits)	Academic Yea	r 2024	
Offering Department		& Actuarial Science	,	Quota		
Course Co-ordinator	Prof M Ho	ofert, Statistics & Act	tuarial Science (mhofert@hku.hk)			
Teachers Involved	(Prof M Hofert, Statistics & Actuarial Science)					
Course Objectives	This cour	se provides an intr in theoretical proba	tuarial Science) roduction to measure theory and probal bility which are important for students to			
Course Objectives Course Contents	This cour concepts and statis Contents	se provides an intr in theoretical proba tics. include: sigma-alge	oduction to measure theory and probal bility which are important for students to ebra, measurable space, measure and	do research in actuaria probability, measure sp	l science, probability	
Course Objectives Course Contents & Topics	This cour concepts and statis Contents space, me variables,	se provides an intr in theoretical proba tics. include: sigma-alge easurable functions, Hilbert spaces, cor	roduction to measure theory and probal bility which are important for students to ebra, measurable space, measure and random variables, integration theory, chan nditional expectation, martingales.	do research in actuaria probability, measure sp	l science, probability	
Course Objectives Course Contents	This cour concepts and statis Contents space, me variables, On succes	se provides an intr in theoretical proba tics. include: sigma-alge easurable functions, Hilbert spaces, cor ssful completion of t	oduction to measure theory and probal bility which are important for students to ebra, measurable space, measure and random variables, integration theory, cha	do research in actuaria probability, measure sp aracteristic functions, cor	l science, probability	
Course Objectives Course Contents & Topics Course Learning	This cour concepts and statis Contents space, me variables, On succes CLO 1 ur	se provides an intr in theoretical proba tics. include: sigma-alge easurable functions, Hilbert spaces, cor ssful completion of t nderstand the funda	oduction to measure theory and probal bility which are important for students to ebra, measurable space, measure and random variables, integration theory, cha nditional expectation, martingales. his course, students should be able to:	do research in actuaria probability, measure sp aracteristic functions, cor eory	I science, probability pace and probability nvergence of randon	
Course Objectives Course Contents & Topics Course Learning	This cour concepts and statis Contents space, me variables, On succes CLO 1 ur CLO 2 le ar	se provides an intr in theoretical proba tics. include: sigma-alge easurable functions, Hilbert spaces, cor ssful completion of t nderstand the funda arn the general con nd dominated conve	roduction to measure theory and probal bility which are important for students to ebra, measurable space, measure and random variables, integration theory, cha nditional expectation, martingales. his course, students should be able to: mental measure theory and probability the iccept of integration, understand the mono rgence theorem	do research in actuaria probability, measure sp aracteristic functions, cor eory	I science, probability pace and probability nvergence of randon	
Course Objectives Course Contents & Topics Course Learning	This cour concepts and statis Contents space, me variables, On succes CLO 1 ur CLO 2 le ar CLO 3 ur	se provides an intr in theoretical proba tics. include: sigma-alge easurable functions, Hilbert spaces, cor ssful completion of t nderstand the funda arn the general con nd dominated conve nderstand the conce	roduction to measure theory and probal bility which are important for students to ebra, measurable space, measure and random variables, integration theory, cha nditional expectation, martingales. his course, students should be able to: mental measure theory and probability the rept of integration, understand the mono rgence theorem opt of conditional expectation	do research in actuaria probability, measure sp aracteristic functions, cor eory	I science, probability pace and probability nvergence of randon	
Course Objectives Course Contents & Topics Course Learning Outcomes	This cour concepts and statis Contents space, me variables, On succes CLO 1 ur CLO 2 le ar CLO 3 ur CLO 4 ha	se provides an intr in theoretical proba tics. include: sigma-alge easurable functions, Hilbert spaces, cor ssful completion of t nderstand the funda arn the general con nd dominated conve nderstand the conce ave some elementar	roduction to measure theory and probal bility which are important for students to ebra, measurable space, measure and random variables, integration theory, chanditional expectation, martingales. his course, students should be able to: mental measure theory and probability the roept of integration, understand the mono- rgence theorem opt of conditional expectation y knowledge of martingale	do research in actuaria probability, measure sp aracteristic functions, cor eory	I science, probability pace and probability nvergence of randon	
Course Objectives Course Contents & Topics Course Learning	This cour concepts and statis Contents space, me variables, On succes CLO 1 ur CLO 2 le ar CLO 3 ur CLO 4 ha	se provides an intr in theoretical proba tics. include: sigma-alge easurable functions, Hilbert spaces, cor ssful completion of t nderstand the funda arn the general con nd dominated conve nderstand the conce	roduction to measure theory and probal bility which are important for students to ebra, measurable space, measure and random variables, integration theory, chanditional expectation, martingales. his course, students should be able to: mental measure theory and probability the roept of integration, understand the mono- rgence theorem opt of conditional expectation y knowledge of martingale	do research in actuaria probability, measure sp aracteristic functions, cor eory	I science, probability pace and probability nvergence of randon	
Course Objectives Course Contents & Topics Course Learning Outcomes Pre-requisites (and Co-requisites and Impermissible combinations) Offer in 2024 - 2025	This cour concepts and statis Contents space, me variables, On succes CLO 1 ur CLO 2 le ar CLO 3 ur CLO 4 ha Pass in S	se provides an intr in theoretical proba tics. include: sigma-alge easurable functions, Hilbert spaces, cor ssful completion of t nderstand the funda arn the general con nd dominated conve nderstand the conce ave some elementar	roduction to measure theory and probal bility which are important for students to ebra, measurable space, measure and random variables, integration theory, cha aditional expectation, martingales. his course, students should be able to: mental measure theory and probability the repet of integration, understand the mono rgence theorem pt of conditional expectation y knowledge of martingale	do research in actuaria probability, measure sp aracteristic functions, cor eory	I science, probability pace and probability nvergence of random	
Course Objectives Course Contents & Topics Course Learning Outcomes Pre-requisites (and Co-requisites and Impermissible combinations)	This cour concepts and statis Contents space, me variables, On succes CLO 1 ur CLO 2 le ar CLO 3 ur CLO 4 ha Pass in S	se provides an intr in theoretical proba tics. include: sigma-alge easurable functions, Hilbert spaces, cor ssful completion of t nderstand the funda arn the general com nd dominated conve nderstand the conce ave some elementar TAT3603 or STAT39 d sem Offer in 202 Demonstrate thorough learning outcomes. Sh apply knowledge to a	roduction to measure theory and probal bility which are important for students to ebra, measurable space, measure and random variables, integration theory, cha aditional expectation, martingales. his course, students should be able to: mental measure theory and probability the repet of integration, understand the mono rgence theorem pt of conditional expectation y knowledge of martingale	do research in actuaria probability, measure sp aracteristic functions, cor eory otone convergence theo Examination wledge and skills required for thinking, with evidence of origi	I science, probability pace and probability nvergence of random rem, Fatou's lemma May r attaining all the course inal thought, and ability to	
Course Objectives Course Contents Topics Course Learning Outcomes Pre-requisites (and Co-requisites and Impermissible combinations) Offer in 2024 - 2025 Grade Descriptors	This cour concepts and statis Contents space, me variables, On succes CLO 1 ur CLO 2 le ar CLO 3 ur CLO 4 ha Pass in S	se provides an intri in theoretical proba tics. include: sigma-alge easurable functions, Hilbert spaces, cor ssful completion of t inderstand the funda arn the general com ind dominated conve derstand the conce ave some elementar TAT3603 or STAT39 d sem Offer in 202 Demonstrate thorough learning outcomes. Sh apply knowledge to a presentational skills. Demonstrate substant learning outcomes. Sh	roduction to measure theory and probal bility which are important for students to ebra, measurable space, measure and random variables, integration theory, cha nditional expectation, martingales. his course, students should be able to: mental measure theory and probability the iccept of integration, understand the mono rgence theorem pt of conditional expectation y knowledge of martingale 003 5 - 2026 : Y n mastery at an advanced level of extensive know ow strong analytical and critical abilities and logical	do research in actuaria probability, measure sp aracteristic functions, cor eory otone convergence theo Examination wledge and skills required for thinking, with evidence of origin r situations. Apply highly effe skills required for attaining at gical thinking, and ability to ap	I science, probability pace and probability overgence of random rem, Fatou's lemma May r attaining all the course inal thought, and ability to active organizational and least most of the course	
Course Objectives Course Contents Topics Course Learning Outcomes Pre-requisites (and Co-requisites and Impermissible combinations) Offer in 2024 - 2025 Grade Descriptors	This cour concepts and statis Contents space, me variables, On succe: CLO 1 ur CLO 2 le ar CLO 3 ur CLO 4 ha Pass in S	se provides an intri in theoretical proba tics. include: sigma-alge easurable functions, Hilbert spaces, cor ssful completion of the arn the general com- nd dominated conve- nderstand the funda arn the general con- nd dominated conve- nderstand the conce ave some elementar TAT3603 or STAT39 d sem Offer in 202 Demonstrate thorough learning outcomes. Sh apply knowledge to a presentational skills. Demonstrate substant learning outcomes. Sh and some unfamiliar si Demonstrate general outcomes. Show evid	roduction to measure theory and probal bility which are important for students to ebra, measurable space, measure and random variables, integration theory, cha nditional expectation, martingales. his course, students should be able to: mental measure theory and probability the ocept of integration, understand the mono rgence theorem pt of conditional expectation y knowledge of martingale 003 5 - 2026 : Y n mastery at an advanced level of extensive know ow strong analytical and critical abilities and logical a wide range of complex, familiar and unfamiliar ial command of a broad range of knowledge and low evidence of analytical and critical abilities and logical	do research in actuaria probability, measure sp aracteristic functions, cor eory otone convergence theo biological thinking, with evidence of origin r situations. Apply highly effet skills required for attaining at ogical thinking, and ability to a ational skills.	I science, probability pace and probability overgence of random rem, Fatou's lemma May r attaining all the course inal thought, and ability to cetive organizational and least most of the course sply knowledge to familiar t of the course learning	
Course Objectives Course Contents Topics Course Learning Outcomes Pre-requisites (and Co-requisites and Impermissible combinations) Offer in 2024 - 2025 Grade Descriptors	This cour concepts and statis Contents space, me variables, On succe: CLO 1 ur CLO 2 le ar CLO 3 ur CLO 4 ha Pass in S	se provides an intri in theoretical proba tics. include: sigma-alge easurable functions, Hilbert spaces, cor ssful completion of the arn the general con- nd dominated conver- nderstand the fundar arn the general con- nd dominated conver- nderstand the concer ave some elementar TAT3603 or STAT39 d sem Offer in 202 Demonstrate thorough learning outcomes. Sh apply knowledge to a presentational skills. Demonstrate substant learning outcomes. Sh and some unfamiliar si Demonstrate general outcomes. Show evid familiar situations. App Demonstrate partial bi Show evidence of som	roduction to measure theory and probal bility which are important for students to ebra, measurable space, measure and random variables, integration theory, cha nditional expectation, martingales. his course, students should be able to: mental measure theory and probability the toept of integration, understand the mono rgence theorem pt of conditional expectation y knowledge of martingale 003 5 - 2026 : Y n mastery at an advanced level of extensive kno ow strong analytical and critical abilities and logical a wide range of complex, familiar and unfamiliar ial command of a broad range of knowledge and ituations. Apply effective organizational and present but incomplete command of knowledge and skill ence of some analytical and critical abilities and lo ituations. Apply effective organizational and present but incomplete command of knowledge and skill ence of some analytical and critical abilities and lo ive widence of analytical and critical abilities and lo ituations. Apply effective organizational and present but incomplete command of knowledge and skills ence of some analytical mod critical abilities and lo ive widence of analytical and critical abilities and lo ive widence of analytical and critical abilities and lo ituations. Apply effective organizational and present but incomplete command of knowledge and skills ence of some analytical indication in the organizational and present but incomplete command of knowledge and skills required to make the organization in the organizati	do research in actuaria probability, measure sp aracteristic functions, cor eory otone convergence theo between the solution of the solution wiedge and skills required for thinking, with evidence of origin r situations. Apply highly effe skills required for attaining at ogical thinking, and ability to ap ational skills. Its required for attaining mos ogical thinking, and ability to a ational skills. ed for attaining some of the ca alytical and critical abilities. Sh	I science, probability pace and probability overgence of random rem, Fatou's lemma May r attaining all the course inal thought, and ability to active organizational and least most of the course pyly knowledge to familiar t of the course learning apply knowledge to most pourse learning outcomes.	
Course Objectives Course Contents & Topics Course Learning Outcomes Pre-requisites (and Co-requisites and Impermissible combinations) Offer in 2024 - 2025 Grade Descriptors	This cour concepts and statis Contents space, me variables, On succe: CLO 1 ur CLO 2 le ar CLO 3 ur CLO 4 ha Pass in S Y 2nc A B C	se provides an intri in theoretical proba tics. include: sigma-alge easurable functions, Hilbert spaces, cor ssful completion of the inderstand the funda arn the general con- nd dominated conve- nderstand the conce ave some elementar TAT3603 or STAT39 d sem Offer in 202 Demonstrate thorough learning outcomes. Sha apply knowledge to a presentational skills. Demonstrate substant learning outcomes. Sha apply knowledge to a presentational skills. Demonstrate general outcomes. Show evidence of som knowledge to solve pro Demonstrate little or n of analytical and critice	roduction to measure theory and probal bility which are important for students to ebra, measurable space, measure and random variables, integration theory, chan inditional expectation, martingales. this course, students should be able to: mental measure theory and probability the roept of integration, understand the mono rgence theorem opt of conditional expectation y knowledge of martingale 103 5 - 2026 : Y mastery at an advanced level of extensive know ow strong analytical and critical abilities and logical a wide range of complex, familiar and unfamiliar ial command of a broad range of knowledge and skill ence of some analytical and critical abilities and logical tuations. Apply effective organizational and present but incomplete command of knowledge and skill ence of some analytical and critical abilities and logical to imply effective organizational and present but incomplete command of knowledge and skill ence of some analytical and critical abilities and logical to imited command of knowledge and skills ence of some analytical and critical abilities and in the coherent and logical thinking, but with limited ana oblems. Apply limited or barely effective organization o evidence of command of knowledge and skills require the coherent and logical thinking. Show very	do research in actuaria probability, measure sp aracteristic functions, cor eory otone convergence theo be and skills required for thinking, with evidence of origi r situations. Apply highly effe skills required for attaining at gical thinking, and ability to ap ational skills. Ils required for attaining mos ogical thinking, and ability to a tional skills. Ils required for attaining mos ogical thinking, and ability to a ational skills. Ils required for attaining mos ogical thinking, and ability to a tional skills. Ils required for attaining mos ogical thinking and ability to a tional skills. Ils required for attaining the course little or no ability to apply know	I science, probability pace and probability overgence of random rem, Fatou's lemma May r attaining all the course inal thought, and ability to sective organizational and least most of the course poly knowledge to familiar t of the course learning apply knowledge to most pourse learning outcomes. ow limited ability to apply learning outcomes. Lack	
Course Objectives Course Contents & Topics Course Learning Outcomes Pre-requisites (and Co-requisites and Impermissible combinations) Offer in 2024 - 2025 Grade Descriptors (A+ to F) Communication-	This cour concepts and statis Contents space, me variables, On succe: CLO 1 ur CLO 2 le ar CLO 3 ur CLO 4 ha Pass in S Y 2nc A B C D	se provides an intri in theoretical proba tics. include: sigma-alge easurable functions, Hilbert spaces, cor ssful completion of the inderstand the funda arn the general con- nd dominated conve- nderstand the conce ave some elementar TAT3603 or STAT39 d sem Offer in 202 Demonstrate thorough learning outcomes. Sha apply knowledge to a presentational skills. Demonstrate substant learning outcomes. Sha apply knowledge to a presentational skills. Demonstrate general outcomes. Show evidence of som knowledge to solve pro Demonstrate little or n of analytical and critice	oduction to measure theory and probal bility which are important for students to ebra, measurable space, measure and random variables, integration theory, cha nditional expectation, martingales. his course, students should be able to: mental measure theory and probability the cept of integration, understand the mono rgence theorem of conditional expectation y knowledge of martingale 003 5 - 2026 : Y n mastery at an advanced level of extensive know ow strong analytical and critical abilities and logical a wide range of complex, familiar and unfamiliar ial command of a broad range of knowledge and tow evidence of analytical and critical abilities and logical but incomplete command of knowledge and skill ence of some analytical and critical abilities and present but incomplete command of knowledge and skills require coherent and logical thinking, but with limited ana oblems. Apply limited or barely effective organization a evidence of command of knowledge and skills require	do research in actuaria probability, measure sp aracteristic functions, cor eory otone convergence theo be and skills required for thinking, with evidence of origi r situations. Apply highly effe skills required for attaining at gical thinking, and ability to ap ational skills. Ils required for attaining mos ogical thinking, and ability to a tional skills. Ils required for attaining mos ogical thinking, and ability to a ational skills. Ils required for attaining mos ogical thinking, and ability to a tional skills. Ils required for attaining mos ogical thinking and ability to a tional skills. Ils required for attaining the course little or no ability to apply know	I science, probability pace and probability overgence of random rem, Fatou's lemma May r attaining all the course inal thought, and ability to ective organizational and least most of the course poly knowledge to familiar t of the course learning apply knowledge to most pourse learning outcomes.	
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Course Objectives Course Contents & Topics Course Learning Outcomes Pre-requisites (and Co-requisites and Impermissible combinations) Offer in 2024 - 2025 Grade Descriptors (A+ to F) Communication- intensive Course Course Type Course Type Course Type Course Teaching & Learning Activities Assessment Methods	This cour concepts and statis Contents space, me variables, On succes CLO 1 ur CLO 2 le ar CLO 3 ur CLO 4 ha Pass in S Y 2nc A B C D Fail N Lecture-b Activities Lectures Tutorials Reading J	se provides an intri in theoretical proba tics. include: sigma-alge easurable functions, Hilbert spaces, cor ssful completion of t nderstand the funda arn the general com nd dominated conven- ned some elementar TAT3603 or STAT39 d sem Offer in 202 Demonstrate thorough learning outcomes. Sha presentational skills. Demonstrate general outcomes. Show evidence of sor knowledge to solve pro- Demonstrate jurited on show evidence of sor knowledge to solve pro- Demonstrate little or n of analytical and critica Organization and pres- ased course s	oduction to measure theory and probal bility which are important for students to ebra, measurable space, measure and random variables, integration theory, chanditional expectation, martingales. his course, students should be able to: mental measure theory and probability theorept of integration, understand the monorgence theorem to f conditional expectation y knowledge of martingale 1003 5 - 2026 : Y n mastery at an advanced level of extensive know ow strong analytical and critical abilities and logical a wide range of complex, familiar and unfamiliar ial command of a broad range of knowledge and solutiations. Apply effective organizational and present but incomplete command of knowledge and skills require to forme analytical and critical abilities and level with downledge end skills require coherent and logical thinking, but with limited and by moderately effective organizational and present and bolems. Apply limited or barely effective organizational and present and abilities, logical and coherent thinking. Show very entational skills are minimally effective or ineffective or ineffe	do research in actuaria probability, measure sp aracteristic functions, cor eory otone convergence theo by the space of the space wedge and skills required for thinking, with evidence of origin r situations. Apply highly effer skills required for attaining at gical thinking, and ability to ap ational skills. Its required for attaining mos ogical thinking, and ability to ap ational skills. Its required for attaining mos ogical thinking, and ability to a alytical and critical abilities. Sh nal and presentational skills. Ititle or no ability to apply know by the space of the space of the space little or no ability to apply know by the space of the space of the space of the space of the space of the space of the space of the space of the space of the space of the space of the space of the space of the space alytical and critical abilities. Sh and and presentational skills.	May rem, Fatou's lemma May rataining all the course inal thought, and ability to crew organizational and least most of the course poly knowledge to familiar t of the course learning apply knowledge to most ourse learning outcomes. Lack vledge to solve problems. No. of Hours 36 12 100 Assessment Methods	

Required/recommended	Jean Jacod and Philip Protter: Probability Essentials (Universitext, Springer-Verlag,
reading and	New York, 2004, 2nd edition)
online materials	Chung K. L.: A Course in Probability Theory (Academic Press, 2001, 3rd edition)
Course Website	http://moodle.hku.hk

STAT7611		ational statistics	(6 credits)	Academic Year	2024	
Offering Department		& Actuarial Science		Quota		
Course Co-ordinator	TBC, Stat	istics & Actuarial Scie	ence (ugenq@hku.hk)			
eachers Involved Course Objectives	This cour	se aims to divo	ndergraduate and postgraduate stude	ante in statistice a book	around in moder	
-	computati discovery	onally intensive meth in data analysis, of s	nods in statistics. It emphasizes the ro tatistical inference, and for development	ble of computation as a f t of statistical theory and m	undamental tool of nethods.	
Course Contents & Topics	Hastings rejection method, e Integration	Contents include: Bayesian statistics, Markov chain Monte Carlo methods including Gibbs sampler, the Metropolis- Hastings algorithm, and data augmentation; Generation of random variables including the inversion methods, rejection sampling, the sampling/importance resampling method; Optimization techniques including Newton's method, expectation-maximization (EM) algorithm and its variants, and minorization-maximization (MM) algorithms; Integration including Laplace approximations, Gaussian quadrature, the importance sampling method; and other				
Course Learning			models, neural networks, and Bootstrap is course, students should be able to:	methous.		
Outcomes	CLO 1 ur Ca CLO 2 re alg CLO 3 ur th CLO 4 ap	 On successful completion of this course, students should be able to: CLO 1 understand the importance of the technique for generating random variables in Bayesian statistics, Mont Carlo integration and bootstrapping methods CLO 2 realize the advantages and disadvantages of the Newton-Raphson algorithm and the Fisher scorin algorithm and apply them to fit generalized linear models CLO 3 understand the essence and basic principle of the EM-type algorithms and MM-type algorithms, realize their range of application, and apply them to solve practical problems CLO 4 apply EM-type algorithms to find the posterior mode and apply Markov chain Monte Carlo methods to generate posterior samples CLO 5 apply Bootstrap methods to obtain estimated standard errors of estimators and confidence intervals of 				
			rametric and non-parametric cases			
Pre-requisites (and Co-requisites and Impermissible combinations)		TAT3600 or STAT390	7			
Offer in 2024 - 2025	-	er in 2025 - 2026 : N		Examination		
Grade Descriptors (A+ to F)	A Demonstrate thorough mastery at an advanced level of extensive knowledge and skills required for attaining all learning outcomes. Show strong analytical and critical abilities and logical thinking, with evidence of original thought, a apply knowledge to a wide range of complex, familiar and unfamiliar situations. Apply highly effective organiz- presentational skills.				al thought, and ability to	
	B Demonstrate substantial command of a broad range of knowledge and skills required for attaining at least most of the course learning outcomes. Show evidence of analytical and critical abilities and logical thinking, and ability to apply knowledge to familiar and some unfamiliar situations. Apply effective organizational and presentational skills.					
	C Demonstrate general but incomplete command of knowledge and skills required for attaining most of the course learning outcomes. Show evidence of some analytical and critical abilities and logical thinking, and ability to apply knowledge to most familiar situations. Apply moderately effective organizational and presentational skills.					
	D Fail	Show evidence of some knowledge to solve prob Demonstrate little or no	limited command of knowledge and skills requir coherent and logical thinking, but with limited an lems. Apply limited or barely effective organizatio evidence of command of knowledge and skills re abilities, logical and coherent thinking. Show very	alytical and critical abilities. Show nal and presentational skills. quired for attaining the course le	v limited ability to apply arning outcomes. Lack	
Communication- ntensive Course	N		ntational skills are minimally effective or ineffective			
Course Type	Lecture-ba	ased course				
Course Teaching	Activities		Details		No. of Hours	
& Learning Activities	Lectures				36	
	Tutorials				12	
	Reading /	Self study			100	
Assessment Methods and Weighting	Methods		Details	Weighting in final course grade (%)	Assessment Methods to CLO Mapping	
	Examinat	ion	One 2-hour written examination	50	CLO 1, 2, 3, 4, 5	
	Assignme	ents	Coursework (assignments, practical work, and a term test)	50	CLO 1, 2, 3, 4, 5	
Required/recommended reading and online materials	Computati Givens, G	ion (Chapman & Hall .H. and Hoeting, J.A.	K.W: Bayesian Missing Data Problems /CRC, Boca Raton, 2010). : Computational Statistics (Wiley, 2005) Ionte Carlo Statistical Methods (Springe		and Non-iterative	
Course Website		dle.hku.hk				
	A al		lalling (Canadita)	App domin Verse	0004	
STAT7614		ed statistical mod	iening (6 creats)	Academic Year	2024	
Offering Department		& Actuarial Science	arial Science (stacw@hku.hk)	Quota		
Course Co ordinator		ng, Statistics & Actual	· · · ·			
		0.	,			
Course Co-ordinator Teachers Involved Course Objectives	(Prof C Wardshinstory) This cours using pop	ang,Statistics & Actua se introduces modern pular computing soft	,			

Outcomes CLO 1 describe clearly the basic characteristic and rationale behind the formulation of each statistical m CLO 2 identify for a given set of data the most suitable statistical model and tools to use CLO 3 dennistrate the ability of using computing software for building scoring models for various me and prediction problems involving binary and counting responses; employing the powerful too smoothing using R or Python for real data mining problems Pre-requisites (and Co-requisites and Impermissible combinations) Pass in STAT3600 or STAT3907 Offer in 2024 - 2025 Y 2nd sem Qrade Descriptors (A+ to F) A Demonstrate thorough mastery at an advanced level of extensive knowledge and skills required for attaining and some unfamiliar situations. Apply highly effective organ presentational skills. B Demonstrate ubstantial command of a broad range of knowledge and skills required for attaining nest of the con and some unfamiliar situations. Apply individe and critical abilities and logical thinking, and ability to apply knowled and some unfamiliar situations. Apply imded road and critical abilities and logical thinking, and ability to apply knowled and some unfamiliar situations. Apply imded road and critical abilities and logical thinking, and ability to apply knowled and some unfamiliar situations. Apply imded road and critical abilities and logical thinking, and ability to apply knowled and some unfamiliar situations. Apply imded road and critical abilities and logical thinking, and ability to apply knowled and some unfamiliar situations. Apply imded road road regulared for attaining nose of the course learning by moderately offective organizational and presentational skills. <	ourse Learning		sectul completion of this	course, students should be able to:			
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		N					
Course Type Lecture-based course		Lecture-h	ased course				

Course Teaching	Activities	ities Details		No. of Hours
& Learning Activities	Lectures			36
	Tutorials			12
	Reading / Self study			100
Assessment Methods and Weighting	Methods	Details	Weighting in final course grade (%)	Assessment Methods to CLO Mapping
	Examination	One 2-hour written examination	75	CLO 1, 2, 3
	Assignments	Coursework (assignments, tutorials, and a class test)	25	CLO 1, 2, 3
Required/recommended reading and online materials	McLeish, Don L.: Monte Carlo Simulation & Finance. (Wiley, 2005). Glasserman, Paul: Monte Carlo Methods in Financial Engineering. (Springer, 2003). Danielsson Jon: Financial Risk Forecasting (Willy 2011) McNeil, A. J., Frey, R. & Embrechts, P.: Quantitative Risk Management (Princeton, 2005) Tsay, R.S.: Analysis of Financial Time Series (Wiley, 2010, 3rd edition)			
Course Website	http://moodle.hku.hk			

<u>SECTION VII Degree Regulations</u>

REGULATIONS FOR THE DEGREE OF BACHELOR OF SCIENCE IN ACTUARIAL SCIENCE BSc(ActuarSc)

(See also General Regulations and Regulations for First Degree Curricula)

Definitions

 $AS1^1$ For the purpose of these regulations and the syllabuses for the degree of BSc in Actuarial Science, unless the context otherwise requires:

"Course" means a course of study, with a credit value expressed as a number of credit-units as specified in the syllabuses for a degree curriculum.

"Syllabus" means courses taught by departments, centres, and schools, offered under a degree curriculum.

"Credits" or "credit-units" means the value assigned to each course to indicate its study load relative to the total study load under a degree curriculum. The study load refers to the hours of student learning activities and experiences, both within and outside the classroom, and includes contact hours and time spent on assessment tasks and examinations. Candidates who satisfactorily complete courses with a credit value earn the credits assigned to these courses.

Admission to the BSc in Actuarial Science degree

- **AS2** To be eligible for admission to the BSc in Actuarial Science degree, candidates shall:
- (a) comply with the General Regulations;
- (b) comply with the Regulations for First Degree Curricula; and
- (c) satisfy all the requirements of the curriculum in accordance with these regulations and the syllabuses.

Period of study

AS3 The curriculum for the BSc(ActuarSc) degree shall normally require eight semesters of fulltime study, extending over not fewer than four academic years, and shall include any assessment to be held during and/or at the end of each semester. Candidates shall not in any case be permitted to extend their studies beyond the maximum period of registration of six academic years.

Selection of courses

AS4 Candidates shall select their courses in accordance with these regulations and the guidelines specified in the syllabuses before the beginning of each semester. Any change to the selection of courses shall be made only during the add/drop period of the semester in which the course begins, and such changes shall not be reflected in the transcript of the candidate. Requests for changes after the designated add/drop period of the semester shall not be considered.

¹ This regulation should be read in conjunction with UG1 of the Regulations for First Degree Curricula.

Curriculum requirements and progression in curriculum

AS5

- (a) Candidates shall satisfy the requirements prescribed in UG5 of the Regulations of First Degree Curricula.
- (b) Candidates shall take not fewer than 240 credits, in the manner specified in these regulations and the syllabuses, including 132 credits of the required courses as prescribed in the professional core of the BSc(ActuarSc) degree curriculum.
- (c) Candidates shall normally be required to take not fewer than 24 credits nor more than 30 credits in any one semester (except the summer semester) unless otherwise permitted or required by the Board of the Faculty, or except in the last semester of study when the number of outstanding credits required to complete the curriculum requirements may be fewer than 24 credits.
- (d) Candidates may, of their own volition, take additional credits not exceeding 6 credits in each semester, and/or further credits during the summer semester, accumulating up to a maximum of 72 credits in one academic year. With the special permission of the Board of the Faculty, candidates may exceed the annual study load of 72 credits in a given academic year provided that the total number of credits taken does not exceed the maximum curriculum study load of 288 credits for the normative period of study specified in the curriculum regulations, save as provided for under AS5(e).
- (e) Where candidates are required to make up for failed credits, the Board of the Faculty may give permission for candidates to exceed the annual study load of 72 credits provided that the total number of credits taken does not exceed the maximum curriculum study load of 432 credits for the maximum period of registration specified in the curriculum regulations.
- (f) Candidates may, with the approval of the Board of the Faculty, transfer credits for courses completed at other institutions at any time during their candidature. The number of transferred credits will be recorded on the transcript of the candidate, but the results of courses completed at other institutions shall not be included in the calculation of the GPA. The number of credits to be transferred shall not exceed half of the total credits normally required under the degree curricula of the candidates during their candidature at the University.
- (g) Candidates shall be recommended for discontinuation of their studies if they have:
 - (i) failed to complete successfully 36 or more credits in two consecutive semesters (not including the summer semester), except where they are not required to take such a number of credits in the two given semesters, or
 - (ii) failed to achieve an average Semester GPA of 1.0 or higher for two consecutive semesters (not including the summer semester), or
 - (iii) exceeded the maximum period of registration specified in AS3, unless otherwise permitted by the Board of the Faculty.

Advanced standing

AS6 Advanced standing may be granted to candidates in recognition of studies completed successfully before admission to the University in accordance with UG2 of the Regulations for First Degree Curricula. Credits granted for advanced standing will be recorded on the transcript of the candidate but shall not be included in the calculation of the GPA.

Assessment

AS7

- (a) Candidates shall be assessed for each of the courses for which they have registered, and assessment may be conducted in any combination of continuous assessment of coursework, written examinations and/or any other assessable activities. Only passed courses will earn credits.
- (b) Candidates who are unable, because of illness, to be present at the written examination of any course may apply for permission to present themselves at a supplementary examination of the same course to be held before the beginning of the First Semester of the following academic year. Any such application shall be made on the form prescribed within seven calendar days of the first day of the candidate's absence from any examination. Any supplementary examination shall be part of that academic year's examinations, and the provisions made in the regulations for failure at the first attempt shall apply accordingly.
- (c) Candidates shall not be permitted to repeat a course for which they have received a D grade or above for the purpose of upgrading.
- (d) Candidates are required to make up for failed courses in the following manner: repeating the failed course by undergoing instruction and satisfying the assessment, or for elective courses, taking another course in lieu and satisfying the assessment requirements.
- (e) There shall be no appeal against the results of examinations and other forms of assessment.

Award of BSc in Actuarial Science Degree

- **AS8** To be eligible for the award of the BSc in Actuarial Science degree, candidates shall have:
- (a) satisfied the requirements in UG5 of the Regulations for First Degree Curricula;
- (b) passed not fewer than 240 credits, comprising 132 credits of the required courses as prescribed in the professional core of the BSc(ActuarSc) degree curriculum.

Honours classification

AS9

(a) Honours classifications shall be awarded in five divisions: First Class Honours, Second Class Honours Division One, Second Class Honours Division Two, Third Class Honours, and Pass. The classification of honours shall be determined by the Board of Examiners for the Degree of BSc(ActuarSc) in accordance with the following Graduation GPA scores, with all courses taken (including failed courses, but not including courses approved by the Senate graded as 'Pass', 'Fail' or 'Distinction') carrying weightings which are proportionate to their credit values*:

<u>Class of honours</u>	<u>GGPA range</u>
First Class Honours	3.60 - 4.30
Second Class Honours	(2.40 - 3.59)
Division One	3.00 - 3.59
Division Two	2.40 - 2.99
Third Class Honours	1.70 - 2.39
Pass	1.00 - 1.69

- (b) Honours classification may not be determined solely on the basis of a candidate's Graduation GPA and the Board of Examiners for the Degree of BSc(ActuarSc) may, at its absolute discretion and with justification, award a higher class of honours to a candidate deemed to have demonstrated meritorious academic achievement but whose Graduation GPA falls below the range stipulated in UG9(a) of the higher classification by not more than 0.1 Grade Point.
- (c) A list of candidates who have successfully completed all degree requirements shall be posted on Faculty noticeboards.
- * For students in the 2017-18 intake and thereafter who have successfully completed six Common Core courses, the calculation of Graduation GPA is subject to the proviso that either five Common Core course with the highest grades (covering all four Areas of Inquiry), or all six courses will be counted towards Graduation GPA, depending on which generates the higher Graduation GPA.

REGULATIONS FOR FIRST DEGREE CURRICULA

(See also General Regulations)

UG 1 Definitions:

For the purpose of regulations and syllabuses for all first degree curricula unless otherwise defined — $\ensuremath{\mathsf{-\!\!\!\!\!\!\!\!\!\!}}$

An 'academic year' comprises two semesters, the first semester to commence in September and end in December, and the second semester to commence in January and end in May/June, on dates as prescribed by the Senate. It includes, normally at the end of each semester, a period during which candidates are assessed. For some curricula, a 'summer semester' may be organized in addition to the normal two semesters. Clinical curricula have extended semesters.

A 'summer semester' normally comprises seven to eight weeks of intensive timetabled teaching and assessment to commence four weeks after the end of the second semester assessment period, and to conclude about one week before the start of the next academic year.

The 'maximum period of registration' is equivalent to a period which is 150% of the curriculum's normative period of study as specified in the degree regulations, provided that where this results in a residual fraction of an academic year, the fractional period shall be extended to one full academic year.

'Degree curriculum' means the entire study requirements for the award of an undergraduate degree.

'Major programme' means the study requirements, including a capstone experience, for a single major area of disciplinary, interdisciplinary or multidisciplinary study, accumulating not fewer than 72 credits nor more than 96 credits, as prescribed in the syllabuses for a degree curriculum.

'Minor programme' means the study requirements for a single minor area of disciplinary, interdisciplinary or multidisciplinary study, accumulating not fewer than 36 credits nor more than 48 credits, as prescribed in the syllabuses for a degree curriculum.

'Professional core' refers to the study requirements, including a capstone experience, prescribed in the regulations and syllabuses for disciplinary studies in degree curricula which are not structured as major/minor programmes for reasons relating to professional qualification and/or accreditation.

'Course' means a course of study, with a credit value expressed as a number of credit-units as specified in the syllabuses for a degree curriculum.

'Disciplinary elective course' or 'Disciplinary Elective' means any course offered in the same major or minor programme or the professional core which can be taken by candidates to fulfill the curriculum requirements as specified in the syllabuses of the degree curriculum.

'Elective course' or 'Elective' means any course offered within the same or another curriculum, other than compulsory courses in the candidate's degree curriculum, that can be taken by the candidate in order to complete the credit requirements of the degree curriculum.

'Capstone experience' refers to one or more courses within the major programme or professional core which are approved by the Board of the Faculty for the purpose of

¹ These regulations are applicable to candidates admitted from 2022-23 onwards. Reference in these regulations to the powers of the Boards of Faculties shall be applicable to Senate Boards of Studies which administer first degree curricula.

integrating knowledge and skills acquired, and which are prescribed in the syllabuses of the degree curriculum.

'Syllabus' means courses taught by departments, centres, and schools, offered under a degree curriculum.

'Prerequisite' means a course or a group of courses which candidates must have completed successfully or a requirement which candidates must have fulfilled before being permitted to take the course in question.

'Corequisite' means a course which candidates must take in conjunction with the course in question.

'Credits' or 'credit-units' means the value assigned to each course to indicate its study load relative to the total study load under a degree curriculum. The study load refers to the hours of student learning activities and experiences, both within and outside the classroom, and includes contact hours and time spent on assessment tasks and examinations. Candidates who satisfactorily complete courses with a credit value earn the credits assigned to these courses.

'Grade Points' are standardized measurements of candidates' academic achievement in courses taken to satisfy the requirements of the degree curriculum and are expressed as a scale prescribed in these regulations.

'Grade Point Average' is a numerical measure of a candidate's academic achievement over a specified period of time. Each course attempted (including each failed course) is assigned a numerical value, with all courses carrying equal weighting. This numerical value is the product of grade points earned for the course and the credit value of that course. The 'Grade Point Average' is the sum of these numerical values divided by the total number of credits attempted:

 $GPA = \frac{\sum_{i} Course \ Grade \ Point \times Course \ Credit \ Value}{\sum_{i} Course \ Credit \ Value}$ (where 'i' stands for all passed and failed courses taken by the

student over a specified period)

'Semester Grade Point Average' or 'Semester GPA' is the GPA in respect of courses attempted by a candidate (including failed courses) during a given semester.

'Year Grade Point Average' or 'Year GPA' is the GPA in respect of courses attempted by a candidate (including failed courses) during a given academic year.

'Cumulative Grade Point Average' or 'Cumulative GPA' is the GPA in respect of courses attempted by a candidate (including failed courses) at the time of calculation.

'Graduation Grade Point Average' or 'Graduation GPA' is the GPA in respect of courses attempted by a candidate (including failed courses) at the point of graduation. For students in the 2017-18 intake and thereafter who have successfully completed six Common Core courses, the calculation of Graduation GPA is subject to the proviso that either five Common Core courses with the highest grades (covering all four Areas of Inquiry), or all six courses will be counted towards Graduation GPA, depending on which generates the higher Graduation GPA.

'Assessment' refers to judgment about the quality and extent to which a student has achieved the stated learning objectives or learning outcomes. It includes all types of assessment activities which allow for such a judgment to be made. For the purpose of interpreting the relevant provisions of the Ordinance and the Statutes and where appropriate, reference to 'examination' or 'examinations' in the Ordinance and the Statutes shall include and cover all forms of 'assessment' and its related processes.

A 'transcript' refers to a transcript of the record of study of a candidate, issued by the

Registry of the University.

UG 2 Advanced standing:

Advanced standing may be granted to candidates in recognition of studies completed successfully before admission to the curriculum. Candidates who are awarded Advanced Standing will not be granted any further credit transfer for those studies for which Advanced Standing has been granted. The amount of credits to be granted for advanced standing shall be determined by the Board of the Faculty, in accordance with the following principles:

- (a) at least half the number of credits of the degree curriculum normally required for award of the degree shall be accumulated through study at this University or from transfer of credits for courses completed at other institutions in accordance with Regulation UG 4(d); and
- (b) in accordance with Statute III.5 and notwithstanding the granting of advanced and/or transfer credits, a minimum of two semesters of study at this University shall be required before a candidate is considered for the award of a first degree, other than a degree in medicine or surgery, and a minimum of four semesters of study at this University shall be required before a candidate is considered for a first degree in medicine or surgery.

Credits granted for advanced standing shall not normally be included in the calculation of the GPA unless permitted by the Board of the Faculty but will be recorded on the transcript of the candidate.

UG 3 Period of study:

The period of study of the curriculum shall be specified in the regulations governing the degree. To be eligible for award of the degree, a candidate shall fulfill all curriculum requirements within the maximum period of registration, unless otherwise permitted or required by the Board of the Faculty.

UG 4 Progression in curriculum:

- (a) Candidates shall normally be required to take not fewer than 24 credits nor more than 30 credits in any one semester (except the summer semester) unless otherwise permitted or required by the Board of the Faculty, or except in the last semester of study when the number of outstanding credits required to complete the curriculum requirements is fewer than 24 credits.
- (b) Candidates may, of their own volition, take additional credits not exceeding 6 credits in each semester, and/or further credits during the summer semester, accumulating up to a maximum of 72 credits in one academic year. With the special permission of the Board of the Faculty, candidates may exceed the annual study load of 72 credits in a given academic year provided that the total number of credits taken does not exceed the maximum curriculum study load for the normative period of study specified in the curriculum regulations, save as provided for under UG4(c).
- (c) Where candidates are required to make up for failed credits, the Board of the Faculty may give permission for candidates to exceed the annual study load of 72 credits provided that the total number of credits taken does not exceed the maximum curriculum study load for the maximum period of registration specified in the curriculum regulations.
- (d) Candidates may, with the approval of the Board of the Faculty, transfer credits for courses completed at other institutions at any time during their candidature. The number of transferred credits may be recorded in the transcript of the candidate, but the results of courses completed at other institutions shall not be included in the calculation of the GPA. The number of credits to be transferred shall not exceed half of the total

credits normally required under the degree curricula of the candidates during their candidature at the University.

- (e) Unless otherwise permitted by the Board of the Faculty, candidates shall be recommended for discontinuation of their studies if they have:
 - (i) failed to complete successfully 36 or more credits in two consecutive semesters (not including the summer semester), except where they are not required to take such a number of credits in the two given semesters, or
 - (ii) failed to achieve an average Semester GPA of 1.0 or higher for two consecutive semesters (not including the summer semester), or
 - (iii) exceeded the maximum period of registration specified in the regulations of the degree.

UG 5 Requirements for graduation:

To be eligible for admission to the degree, candidates shall fulfill the following requirements in addition to the requirements prescribed in the regulations and syllabuses governing the degree curriculum within the maximum period of registration:

- (a) successful completion of 12 credits in English language enhancement, including 6 credits in Core University English² and 6 credits in an English in the Discipline course³;
 (b) successful completion of 6 and its in Chinese language enhancement⁴.
- (b) successful completion of 6 credits in Chinese language enhancement⁴;
- (c) unless otherwise prescribed in the curriculum regulations and syllabuses, successful completion of 36 credits of courses in the Common Core Curriculum, comprising at least one and not more than two courses from each Area of Inquiry with not more than 24 credits of course being selected within one academic year except where candidates are required to make up for failed credits;
- (d) successful completion of a capstone experience as specified in the syllabuses of the degree curriculum; and
- (e) successful completion of any other non-credit bearing courses as required.

UG 6 Exemption:

Candidates may be exempted, with or without special conditions attached, from any of the requirements in UG 5 by the Senate in exceptional circumstances. Candidates who are so exempted must replace the number of exempted credits with courses of the same credit value.

- (b) Candidates declaring double Majors can, if they fail in the ED course for one of the Majors, either (i) re-take and successfully complete that failed ED course, or (ii) successfully complete the ED course for the other Major, irrespective of whether the Major is offered within or outside of the candidates' home Faculty.
- (c) Candidates who undertake studies in double Majors or double degrees are not required to take a second ED course but may be advised by the Faculty to do so.
- ⁴ Candidates who have not studied Chinese language during their secondary education may be exempted from this requirement and should take an elective course in lieu, see *Regulation UG6*.

 $^{^2}$ Candidates who have achieved Level 5 or above in English Language in the Hong Kong Diploma of Secondary Education Examination, or equivalent, are exempted from this requirement, and Core University English is optional. Those who do not take this course should take an elective course in lieu, see *Regulation UG6*.

³ (a) To satisfy the English in the Discipline (ED) requirement, candidates who have passed the ED course for a Major but subsequently change that Major are required to pass the ED course for the new Major, or either of the double Majors finally declared upon graduation irrespective of whether the second Major is offered within or outside of the candidates' home Faculty.

UG 7 Assessment:

- (a) Candidates shall be assessed for each of the courses for which they have registered, and assessment may be conducted in any combination of continuous assessment of coursework, written examinations and/or any other assessable activities. Only passed courses will earn credits.
- (b) Candidates who are unable, because of illness, to be present at the written examination of any course may apply for permission to present themselves at a supplementary examination of the same course to be held before the beginning of the First Semester of the following academic year. Any such application shall be made on the form prescribed within two weeks of the first day of the candidate's absence from any examination. Any supplementary examination shall be part of that academic year's examinations, and the provisions made in the regulations for failure at the first attempt shall apply accordingly.
- (c) Candidates suspended under Statute XXXI shall not be allowed to take, present themselves for, and participate in any assessments during the period of suspension, unless otherwise permitted by the Senate.
- (d) Candidates shall not be permitted to repeat a course for which they have received a D grade or above for the purpose of upgrading.
- (e) Candidates are required to make up for failed courses in the following manner as prescribed in the curriculum regulations:
 - (i) undergoing re-assessment/re-examination in the failed course to be held no later than the end of the following semester (not including the summer semester); or
 - (ii) re-submitting failed coursework, without having to repeat the same course of instruction; or
 - (iii) repeating the failed course by undergoing instruction and satisfying the assessments; or
 - (iv) for elective courses, taking another course *in lieu* and satisfying the assessment requirements.
- (f) There shall be no appeal against the results of examinations and all other forms of assessment.

UG 8 Grading system:

(a) The grades, their standards and the grade points for assessment shall be as follows⁵:

Grade		Standard	Grade Point
A+	٦		4.3
А	}	Excellent	4.0
A-	J		3.7
B+	ſ		3.3
В	}	Good	3.0
B-	J		2.7
C+	٦		2.3
С	}	Satisfactory	2.0
C-	J	•	1.7
D+	l	Pass	1.3
D	ſ	Г 855	1.0
F		Fail	0

(b) Special permission may be given by Senate for courses in individual curricula to be graded as 'Pass', 'Fail' or 'Distinction'. Such courses will not be included in the calculation of the GPA.

⁵ UG 8 is not applicable to the respective Professional Core of the BDS and MBBS curricula.

UG 9 Honours classifications:

(a) Honours classifications shall be awarded in five divisions⁶: First Class Honours, Second Class Honours Division One, Second Class Honours Division Two, Third Class Honours, and Pass. The classification of honours shall be determined by the Board of Examiners for the degree in accordance with the following Graduate GPA scores (GGPA), with all courses taken (including failed courses) carrying weightings which are proportionate to their credit values⁷:

<u>Class of honours</u>	<u>GGPA range</u>
First Class Honours	3.60 - 4.30
Second Class Honours	(2.40 – 3.59)
Division One	3.00 - 3.59
Division Two	2.40 - 2.99
Third Class Honours	1.70 - 2.39
Pass	1.00 - 1.69

- (b) Honours classification may not be determined solely on the basis of a candidate's Graduation GPA and the Board of Examiners for the degree may, at its absolute discretion and with justification, award a higher class of honours to a candidate deemed to have demonstrated meritorious academic achievement but whose Graduation GPA falls below the range stipulated in UG9(a) of the higher classification by not more than 0.1 Grade Point.
- (c) A list of candidates who have successfully completed all degree requirements shall be posted on Faculty noticeboards.

⁶ UG 9 is not applicable to the BChinMed, BDS and MBBS curricula.

⁷ For students in the 2017-18 intake and thereafter who have successfully completed six Common Core courses, the calculation of Graduation GPA is subject to the proviso that either five Common Core course with the highest grades (covering all four Areas of Inquiry), or all six courses will be counted towards Graduation GPA, depending on which generates the higher Graduation GPA.

	SUN	MON	TUE	WED	THUR	FRI	SAT	FIRST SEMESTER: SEP 2 - DEC 23, 2024	Week
SEP-24	1 8 15 22	2 9 16 23	3 10 17 24	4 11 [18] 25	5 12 19 26	6 13 20 27	7 14 21 28	First Day of Teaching: Sep 2, 2024	1 2 3 4
ОСТ-24	29 6 13 20 27	30 7 14 21 28	[1] 8 15 22 29	2 9 16 23 30	3 10 17 24 31	4 [11] 18 25	5 12 19 26	Reading/Field Trip Week: Oct 14 - 19, 2024	5 6 7(Reading) 8 9
NOV-24	3 10 17 24	4 11 18 25	5 12 19 26	6 13 20 27	7 14 21 28	1 8 15 22 29	2 9 16 23 30	Last Day of Teaching: Nov 30, 2024	10 11 12 13
DEC-24	1 8 15 22 29	2 9 16 23 30	3 10 17 (24) <31>	4 11 18 [25]	5 12 19 [26]	6 13 20 27	7 14 21 28	Revision Period: Dec 2 - 6, 2024 Assessment Period: Dec 7 - 23, 2024	14(Revision) 1 2 3 Break
JAN-25	5 12 19 26	6 13 20 27	7 14 21 <28>	[1] 8 15 22 [29]	$\begin{array}{r} 2\\ 9\\ 16\\ \hline 23\\ \hline 30\\ \end{array}$	3 10 17 24 [31]	4 11 18 25	SECOND SEMESTER: JAN 20 - MAY 27, 2025 First Day of Teaching: Jan 20, 2025 Class Suspension Period for the Lunar New Year:	Break Break 1 2
FEB-25	2 9 16 23	3 10 17 24	4 11 18 25	5 12 19 26	6 13 20 27	7 14 21 28	1) 8 15 22	Jan 29 - Feb 4, 2025	3 4 5
MAR-25	2 9 16 23 30	3 10 17 24 31	4 11 18 25	5 12 19 26	6 13 20 27	7 14 21 28	1 8 15 22 29	Reading/Field Trip Week: Mar 10 - 15, 2025	6 7(Reading) 8 9 10
APR-25	6 13 20 27	7 14 [21] 28	1 8 15 22 29	2 9 16 23 30	3 10 17 24	[4] 11 [18] 25	5 12 [19] 26		11 12 13 14
MAY-25	4 11 18 25	[5] 12 19 26	6 13 20 27	7 14 21 28	[1] 8 15 22 29	2 9 16 23 30	3 10 17 24 [31]	Last Day of Teaching: May 3, 2025 Revision Period: May 5 - 10, 2025 Assessment Period: May 12 - 27, 2025	15(Revision) 1 2 3
JUN-25	1 8 15 22 29	2 9 16 23 30	3 10 17 24	4 11 18 25	5 12 19 26	6 13 20 27	7 14 21 28	OPTIONAL SUMMER SEMESTER JUN 30 - AUG 23, 2025	Break Break Break Break 1
JUL-25	6 13 20 27	7 14 21 28	[1] 8 15 22 29	2 9 16 23 30	3 10 17 24 31	4 11 18 25	5 12 19 26		2 3 4 5
AUG-25	3 10 17 24 31	4 11 18 25	5 12 19 26	6 13 20 27	7 14 21 28	1 8 15 22 29	2 9 16 23 30		6 7 8
[] General Holiday Reading/Field Trip Week				-					
() University	() University Holiday (Full Day)		Revision Period						
<> University	Holiday (afternoon oi	nly)	\bigcirc	Class Sus	pension P	eriod for the I	unar New Year	

Teaching Weeks 2024-25 for Undergraduate and Taught Postgraduate Students

Notes:

First Semester: 12 Mondays, 11 Tuesdays and Wednesdays, 12 Thursdays, 11 Fridays, 12 Saturdays Second Semester: 12 Mondays, 12.5 Tuesdays, 13 Wednesdays, 12 Thursdays, 11 Fridays, 12 Saturdays

Assessment Period

Faculty of Science	Office Location	:	Ground Floor, Chong Yuet Ming Physics Building
	Tel	:	3917 2683
	Fax	:	2858 4620
	Email	:	science@hku.hk (General Enquiries)
			sci.ug.enquiry@hku.hk (Academic Matters)
			sci.ug.el@hku.hk (Experiential Learning &
			Enrichment Opportunities)
	Website	:	https://www.scifac.hku.hk/
			/www.scifac.hku.hk/ for the latest ses, timetables, notices and forms)
Departments/Schools			
Biological Sciences	Website	:	https://www.biosch.hku.hk/
Biomedical Sciences	Website	:	https://www.sbms.hku.hk/
Chemistry	Website	:	https://www.chemistry.hku.hk/
Earth Sciences	Website	:	https://www.earthsciences.hku.hk/
Mathematics	Website	:	https://hkumath.hku.hk/web/index.php
Physics	Website	:	https://www.physics.hku.hk/
Statistics and Actuarial Science	Website	:	https://saasweb.hku.hk/
Academic Advicing and Scholarching Office	Tel		2012 0129
Academic Advising and Scholarships Office	-	:	3917 0128
	Website	:	https://aas.hku.hk/
Academic Services Office	Office Location	:	Go4, Run Run Shaw Building
	Tel	:	2859 2433
	Fax	:	2540 1405
	Email	:	asoffice@hku.hk
	Website	:	http://ase.hku.hk/asoffice/
Common Core courses	Website	:	https://commoncore.hku.hk/
HKU Worldwide Undergraduate Exchange Programme	Website	:	https://intlaffairs.hku.hk/
Centre of Development and	Tel	:	3917 2305
Resources for Students (CEDARS)	Website	:	https://www.cedars.hku.hk/
University Health Service	Tel	:	3917 2501 (General enquiries)
			2549 4686 (Medical appointments only)
	Website	:	http://www.uhs.hku.hk
Plagiarism	Website	:	https://tl.hku.hk/plagiarism/
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