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

These regulations apply to candidates admitted to the first year of study of the four-year BSc(ActuarSc) curriculum in the academic year 2025-26 and thereafter.

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

Admission to the degree

AS 1 To be eligible for admission to the BSc(ActuarSc) 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 syllabus.

Period of study

AS 2 The curriculum for the BSc(ActuarSc) degree shall normally require eight semesters of full-time 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, unless otherwise permitted by the Board of Studies of the School of Computing and Data Science.

Curriculum requirements and progression in curriculum

AS 3

(a) Candidates shall satisfy the requirements prescribed in UG 5 of the Regulations of First Degree Curricula.
(b) Candidates shall take not fewer than 240 credits of courses, in the manner specified in these regulations and the syllabus for the BSc(ActuarSc) degree.
(c) Candidates shall normally 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 Studies of the School of Computing and Data Science, 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.
(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 approval of the Board of Studies of the School of Computing and Data Science, 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 as specified in AS 2, save as provided for under AS 3(e).

(e) Where candidates are required to make up for failed credits, the Board of Studies of the School of Computing and Data Science 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 AS 2.

(f) Candidates with unsatisfactory academic progress may be required by the Board of Studies to take a reduced study load.

Selection of courses

AS 4 Candidates shall select their courses in accordance with these regulations and the guidelines specified in the syllabus 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. Withdrawal from courses on medical grounds after the designated add/drop period shall be considered by the Board of Studies of the School of Computing and Data Science.

Assessment and grades

AS 5 Candidates shall be assessed in 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 as specified in the syllabus. Only passed courses will earn credits. Grades shall be awarded in accordance with UG 8 of the Regulations for First Degree Curricula.

AS 6 Candidates are required to make up for failed courses in the following manner:

(a) 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

(b) re-submitting failed coursework, without having to repeat the same course of instruction; or

(c) repeating the failed course by undergoing instruction and satisfying the assessments; or

(d) for elective courses, taking another course in lieu and satisfying the assessment requirements.

AS 7 Candidates shall not be permitted to repeat a course for which they have received a D grade or above for the purpose of upgrading.

AS 8 There shall be no appeal against the results of examinations and other forms of assessment.

Discontinuation of studies

AS 9 Unless otherwise permitted by the Board of Studies of the School of

Computing and Data Science, candidates shall be recommended for discontinuation of their studies if they have:

(a) 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
(b) failed to achieve an average Semester GPA of 1.0 or higher for two consecutive semesters (not including the summer semester); or
(c) exceeded the maximum period of registration specified in AS 2.

Absence from examination

AS 10 Candidates who are unable, because of illness, to be present at the written examinations 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 normally 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.

Advanced standing

AS 11 Advanced standing may be granted to candidates in recognition of studies successfully completed before admission to the University in accordance with UG 2 of the Regulations for First Degree Curricula. The number of advanced credits to be granted shall be determined by the Board of Studies of the School of Computing and Data Science. Credits granted for advanced standing shall not normally be included in the calculation of the GPA unless permitted by the Board of Studies of the School of Computing and Data Science but will be recorded on the transcript of the candidate.

Credit transfer

AS 12 Candidates may, with the approval of the Board of Studies of the School of Computing and Data Science, 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.

Award of BSc in Actuarial Science Degree

AS 13 To be eligible for the award of the BSc(ActuarSc) degree, candidates shall have:

(a) satisfied all the requirements in UG 5 of the Regulations for First Degree Curricula;
(b) achieved a Graduation GPA of 1.00 or above; and
(c) passed a minimum of 240 credits as prescribed in the syllabus for the BSc(ActuarSc) degree.

Honours classification

AS 14

(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 BSc(ActuarSc) degree in accordance with the following Graduation GPA (GGPA) scores, with all courses taken (including failed courses) carrying weightings which are proportionate to their credit values[1]:

Class of honours	***GGPA range***
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 AS 14(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 School noticeboards.

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[1] For students in the 2025-26 intake and thereafter who have successfully completed six 6-credit Common Core courses, the calculation of Graduation GPA is subject to the proviso that either five 6-credit Common Core course with the highest grades (covering all five Areas of Inquiry), or all six 6-credit courses will be counted towards Graduation GPA, depending on which generates the higher Graduation GPA. For students who have successfully completed two 3-credit Common Core Microcredentials in place of one 6-credit Common Core course, the average grade point of the two 3-credit courses will be treated as the grade point of a 6-credit Common Core course.

SYLLABUS FOR THE DEGREE OF BACHELOR OF SCIENCE IN ACTUARIAL SCIENCE [BSc(ActuarSc)]

The syllabus applies to candidates admitted to the first year of study of the four-year BSc(ActuarSc) curriculum in the academic year 2025-26 and thereafter.

Definition and Terminology

1. Each course offered shall be classified as either introductory level course or advanced level course.

2. "Disciplinary core course" is a compulsory course in the professional core which a candidate must pass in the manner provided for in the regulations.

3. "Disciplinary elective course" refers to any course offered in the professional core other than compulsory courses which can be taken by candidates to fulfill the curriculum requirements as specified in the syllabus of the degree curriculum.

4. "Capstone experience course" is an integral part of the degree programme which focuses on integration and application of knowledge and skills gained in the early years of study. It is normally taken in the senior years (year 3 or 4) of study and candidates must complete this for fulfillment of the graduation requirements.

5. "Elective course" 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.

BSc(ActuarSc) Curriculum

The BSc(ActuarSc) curriculum comprises 240 credits of courses, including 132 credits of disciplinary and capstone experience courses for the professional core, with the following structures:

Course category	No. of credits
UG 5 Requirements	54
Disciplinary Core Courses (Introductory)	48
Disciplinary Core Courses (Advanced)	66
Disciplinary Elective Courses (Advanced)	12
Capstone Experience Courses	6
Elective Courses	54
Total	**240**

UG 5 Requirements

Course code	Course	No. of credits
CAES1001	Academic Communication in English[1]	0
CAES9821	Professional and Technical Communication for Statistical Sciences	6
	Chinese language enhancement course specified for the degree curriculum[2]	6
	Common Core[3]	36
	Artificial Intelligence Literacy courses	6
	Non-credit bearing courses in national education and national security education, and any other non-credit bearing courses as may be required from time to time	0
	Total	**54**

[1]Unless otherwise exempted through having achieved Level 5 or above in English Language in the Hong Kong Diploma of Secondary Education Examination, or equivalent.

[2]Candidates should check with the School of Computing and Data Science for the course code and course title of the Chinese language enhancement course to satisfy the programme and graduation requirements. For those who did not study Chinese language during their secondary education and have not reached the required proficiency level for the Chinese language enhancement course specified for the degree curriculum, they are required to take a course in either Chinese language or Chinese culture offered by the Chinese Language Centre of the School of Chinese in lieu.

[3]Candidates have to complete 36 credits in the Common Core Curriculum, comprising at least 6 credits and not more than 12 credits from each Area of Inquiry with not more than 24 credits within one academic year except where candidates are required to make up for failed credits.

Disciplinary Core Courses at Introductory Level

Course code	Course	No. of credits
ACCT1101	Introduction to financial accounting	6
COMP1117	Computer programming	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
SDST2901	Probability and statistics: foundations of actuarial science	6
SDST2902	Financial mathematics	6
	Total	**48**

Disciplinary Core Courses at Advanced Level

Course code	Course	No. of credits
SDST3901	Life contingencies I	6
SDST3902	Mathematical statistics	6
SDST3903	Stochastic models	6
SDST3904	Corporate finance for actuarial science	6

SDST3905	Introduction to financial derivatives	6
SDST3906	Risk theory I	6
SDST3907	Linear models and forecasting	6
SDST3908	Credibility theory and loss modelling	6
SDST3909	Life contingencies II	6
SDST3910	Financial economics I	6
SDST4904	Statistical learning for risk modelling	6
	Total	**66**

Disciplinary Electives Courses at Advanced Level

At least 12 credits selected from the following courses:

Course code	Course	No. of credits
SDST3911	Financial economics II	6
SDST3951	Topics on advanced actuarial modelling	6
SDST3953	Fundamentals of actuarial practice	6
SDST3954	Current topics in actuarial science	6
SDST3956	Life contingencies III	6
SDST4901	Risk theory II	6
SDST4902	Selected topics in actuarial science	6
SDST4903	Actuarial techniques for general insurance	6

Capstone Experience Courses

At least 6 credits selected from the following courses:

Course code	Course	No. of credits
SDST4711	Capstone experience for actuarial science undergraduates	6
SDST4767	Actuarial science internship	6
SDST4798	Statistics and actuarial science project	6

Elective Courses (54 credits)

Candidates should take at least 54 credits of courses offered by any department, except Common Core Courses.

Candidates may choose to take up to four 6-credit postgraduate courses related to their degree as elective courses, subject to the approval of the Programme Director of BSc(ActuarSc), in consideration of class quota and other academic issues.

Impermissible Combinations
Nil

DESCRIPTION FOR UNDERGRADUATE COURSES OFFERED BY THE SCHOOL OF COMPUTING AND DATA SCIENCE

The courses listed below may not be offered every year. The content and assessment of individual courses may be subject to adjustment upon review each academic year. Students should refer to the most up-to-date course outlines as distributed by individual course coordinators.

For the description of courses offered outside the School of Computing and Data Science, please refer to the syllabuses of the respective programmes in the corresponding teaching departments.

INTRODUCTORY LEVEL COURSES

COMP1117 Computer programming (6 credits)

This is an introductory course in computer programming. Students will acquire basic Python programming skills, including syntax, identifiers, control statements, functions, recursions, strings, lists, dictionaries, tuples and files. Searching and sorting algorithms, such as sequential search, binary search, bubble sort, insertion sort and selection sort, will also be covered.

Assessment: 50% continuous assessment and 50% examination

SDST2901 Probability and statistics: foundations of actuarial science (6 credits)

The purpose of this course is to develop knowledge of the fundamental tools in probability and statistics for quantitatively assessing risk. Applications of these tools to actuarial science problems will be emphasized. Students will have a thorough command of probability topics and the supporting calculations.

Assessment: 25% continuous assessment and 75% examination

SDST2902 Financial mathematics (6 credits)

This course introduces the fundamental concepts of financial mathematics which plays an important role in the development of basic actuarial techniques. Practical applications of these concepts are also covered.

Assessment: 40% continuous assessment and 60% examination

ADVANCED LEVEL COURSES

SDST3901 Life contingencies I (6 credits)

The major objectives of this course are to integrate life contingencies into a full probabilistic framework. The time-until-death random variable is the basic building block by which models for life insurances, designed to reduce the financial impact of the random event of untimely death, are developed. This course introduces the concepts of life contingencies and the basic mathematical skills for modelling life insurance products.

Assessment: 40% continuous assessment and 60% examination

SDST3902 Mathematical statistics (6 credits)

This course provides a rigorous introduction to fundamental concepts in probability and mathematical statistics, including stochastic modelling, independence and dependence, summary statistics, conditional expectation and distributions, asymptotic theory, point and interval estimation and hypothesis testing. It is an approved Validation by Educational Experience (VEE) course by the Society of Actuaries (SOA).

Assessment: 40% continuous assessment and 60% examination

SDST3903 Stochastic models (6 credits)

This is an introductory course in stochastic processes. It will cover the basic concepts of the theory of stochastic processes and explore different types of stochastic processes including Markov chains, Poisson processes and Brownian motions.

Assessment: 25% continuous assessment and 75% examination

SDST3904 Corporate finance for actuarial science (6 credits)

This course is designed for actuarial science students to receive finance component of VEE Accounting and Finance from the Society of Actuaries. The objective of this course is to introduce students to the fundamental principles of corporate finance. The course will provide students with a systematic framework within which to evaluate investment and financing decisions for corporations.

Assessment: 25% continuous assessment and 75% examination

SDST3905 Introduction to financial derivatives (6 credits)

Nowadays all risk managers must be well versed in the use and valuation of derivatives. The two basic types of derivatives are forwards (having a linear payoff) and options (having a non-linear payoff). All other derivatives can be decomposed to these underlying payoffs or alternatively they are variations on these basic ideas. This course

aims at demonstrating the practical use of financial derivatives in risk management. Emphases are on pricing and hedging strategies, and the no-arbitrage principle.

Assessment: 25% continuous assessment and 75% examination

SDST3906 Risk theory I (6 credits)

Risk theory is one of the main topics in actuarial science. Risk theory is the applications of statistical models and stochastic processes to insurance problems such as the premium calculation.

Assessment: 25% continuous assessment and 75% examination

SDST3907 Linear models and forecasting (6 credits)

This course deals with applied statistical methods of linear models and investigates various forecasting procedures through using linear models and time series analysis.

Assessment: 25% continuous assessment and 75% examination

SDST3908 Credibility theory and loss modelling (6 credits)

Credibility theory concerns the construction of statistical estimators in order to obtain more reliable ones, for example for premium calculations. Different approaches to credibility theory are introduced (limited fluctuation, Bayesian, greatest accuracy). Loss modelling is at the core of actuarial science and parametric and nonparametric methods for point and interval estimation, as well as model assessment and selection are covered.

Assessment: 40% continuous assessment and 60% examination

SDST3909 Life contingencies II (6 credits)

This course aims at introducing further topics in life insurance. Emphasis will be placed on applications of more advanced theories of life contingencies.

Assessment: 25% continuous assessment and 75% examination

SDST3910 Financial economics I (6 credits)

This course is on option pricing and hedging. The course will concentrate on the theory and idea of derivatives pricing and risk management.

Assessment: 25% continuous assessment and 75% examination

SDST3911 Financial economics II (6 credits)

Stochastic calculus has become an essential tool in economics, insurance, finance, and econometrics nowadays. It serves as the foundation for pricing financial derivatives, including options and futures. In this course, students shall study basic stochastic calculus theory and its applications in financial economics. They will be skillful in using Ito calculus and know its applications in asset pricing and interest rate models. In addition, students will work in groups to prepare and present hot financial topics. They will practice their presentation skills in public speaking and report writing.

Assessment: 60% continuous assessment and 40% examination

SDST3951 Topics on advanced actuarial modelling (6 credits)

This course covers more advanced actuarial models and techniques used in the field of life and non-life insurance.

Assessment: 25% continuous assessment and 75% examination

SDST3953 Fundamentals of actuarial practice (6 credits)

This course teaches students about the business environment and exposes them to practical real-world situations using the actuarial control cycle as a framework.

Assessment: 100% continuous assessment

SDST3954 Current topics in actuarial science (6 credits)

This course aims at providing practical elements for actuarial students including daily life actuarial practice and the basic capability to understand, research in and handle the laws as and when situations would arise, which will benefit students in their coming future career.

Assessment: 100% continuous assessment

SDST3956 Life contingencies III (6 credits)

This course covers concepts and methods in life contingencies that are used in the valuation and financing of long-term actuarial plans and products.

Assessment: 25% continuous assessment and 75% examination

SDST4901 Risk theory II (6 credits)

This course is an advanced course in risk theory which extends various topics discussed in SDST3906. It discusses utility theory, ruin theory, aggregate claims process, and related topics.

Assessment: 25% continuous assessment and 75% examination

SDST4902 Selected topics in actuarial science (6 credits)

This course is an advanced course in actuarial science which discusses selected topics which potential graduate students will find useful. It focuses on tools that are in the frontier of actuarial risk management with examples on applications.

Assessment: 100% continuous assessment

SDST4903 Actuarial techniques for general insurance (6 credits)

The purpose of this course is to develop knowledge of the basic techniques for ratemaking and estimating claim liabilities for general insurance. Application of the actuarial techniques to resolve general insurance problems will be emphasized. The course also provides general knowledge on the general insurance market in Hong Kong. Students will acquire the fundamental concept on general insurance actuarial science together with the supporting calculations.

Assessment: 25% continuous assessment and 75% examination

SDST4904 Statistical learning for risk modelling (6 credits)

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.

Assessment: 25% continuous assessment and 75% examination

CAPSTONE EXPERIENCE COURSES

SDST4711 Capstone experience for actuarial science undergraduates (6 credits)

This project-based course aims to provide students with capstone experience to formulate and investigate practical problems in actuarial science by integrating and applying actuarial theories and techniques learnt in their university years. It aims to help the students to establish a good and solid foundation of self-learning skills, and to enable students to equip with hands-on experience in solving practical problems including definition of the problem, designing the solution, and presentation of the results.

Assessment: 100% continuous assessment

SDST4767 Actuarial science internship (6 credits)

This course is offered to actuarial science students who take on a 6-month full time or similar internships. The objective is for a student to complete this course as a project based on his/her internship.

Assessment: 100% continuous assessment

SDST4798 Statistics and actuarial science project (6 credits)

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.

Assessment: 100% continuous assessment
