REGULATIONS FOR THE DEGREE OF
BACHELOR OF ARTS AND SCIENCES IN FINANCIAL TECHNOLOGY
[BASc(FinTech)] (Subject to Approval)

These regulations apply to students admitted to the BASc(FinTech) degree in the academic year 2025-26 and thereafter.
(See also General Regulations and Regulations for First Degree Curricula)

Admission to the Degree

FITE 1 To be eligible for admission to the BASc(FinTech) degree, a candidate 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

FITE 2 The curriculum for the BASc(FinTech) 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

FITE 3

(a) Candidates shall satisfy the requirements prescribed in UG5 of the Regulations for First Degree Curricula;
(b) Candidates shall take not fewer than 240 credits of courses, comprising 96 credits in Major in Financial Technology (including 54 credits of Discipline Core Courses, 30 credits of Discipline Elective Courses and 12 credits of Capstone experience), 6 credits in English language enhancement, 6 credits in Chinese language enhancement, 24 credits of Common Core Courses, 6 credits in Artificial Intelligence Literacy courses,18 credits of BASc core courses and 84 credits of elective courses; candidates are also required to pass all courses as specified in the syllabuses;
(c) Candidates shall normally select not fewer than 24 credits nor more than 30 credits of courses in any one semester (except the summer semester), unless otherwise permitted or required by the Board of Studies, 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. Candidates may, with the approval of the Board of Studies, 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 FITE2, save as provided for under FITE3(e); and
(e) Where candidates are required to make up for failed credits, the Board of Studies may give permissions 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 FITE2.

FITE 4   Candidates with unsatisfactory academic progress may be required by the Board of Studies to take a reduced study load.

Selection of Courses

FITE 5 Candidates shall select their courses in accordance with these regulations and the guidelines specified in the syllabuses before the beginning of each semester. Changes to the selection of courses may 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 be subject to the approval of the Board of Studies. Withdrawal from courses beyond the designated add/drop period will be subject to the approval of the Board of Studies.

Assessment and Grades

FITE 6 Candidates shall be assessed for each of the courses for which they have registered, and assessment may be conducted in any one or any combination of the following manners: written examinations or tests, continuous assessment, laboratory work, field work, project reports, or in any other manner as specified in the syllabuses.   Only passed courses will earn credits. Grades shall be awarded in accordance with UG8 of the Regulations for First Degree Curricula.

FITE 7 Written examinations or tests shall normally be held at the end of each semester unless otherwise specified in the syllabuses.

FITE 8 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.

FITE 9 Candidates shall not be permitted to repeat a course for which they have received a D grade or above for the purpose of upgrading.

FITE 10 There shall be no appeal against the results of examinations and all other forms of assessment.

FITE 11   Unless otherwise permitted by the Board of Studies, a candidate will be recommended for discontinuation of his/her studies if

    (a) he/she fails 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) he/she fails to achieve an average Semester GPA of 1.0 or higher for two consecutive semesters (not including the summer semester); or
    (c) he/she has exceeded the maximum period of registration specified in FITE2.

Absence from Examination

FITE 12 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.

Advanced Standing

FITE 13 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. The amount of credits to be granted for advanced standing shall be determined by the Board of Studies,in accordance with the following principles:

    (a)   a minimum of four semesters of study at this University shall be required before a candidate is considered for the award of the degree; and

    (b)   at least half of the credits requirements of the degree curriculum shall be accumulated through study at this University, or from transfer of credits for courses completed at other institutions in accordance with UG4(d) of the Regulations for First Degree Curricula.

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

Degree Classification

FITE 14 To be eligible for the award of the BASc(FinTech) degree, candidates shall have:

    (a) achieved a Graduation GPA of 1.00 or above;
    (b) satisfied all the requirements in UG5 of the Regulations for First Degree Curricula;
    (c) passed not fewer than 240 credits, comprising
        i)   54 credits of discipline core courses;
        ii)   30 credits of discipline elective courses;
        iii)   12 credits of capstone experience;
        iv)   12 credits of language enhancement courses[1], including one course in Chinese language enhancement[2] and one in English in the Discipline;
        v)   24 credits of Common Core courses (with one course from each Area of Inquiry);
        vi)   6 credits of Artificial Intelligence Literacy courses;
        vii) 18 credits of BASc core courses;
        viii) 84 credits of elective courses; and
        viiii) non-credit bearing courses as required by the University.

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[1] 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 taking non-credit bearing CAES1001Academic Communication in English. In exceptional circumstances, strong candidates who have achieved Level 4 may be considered for admission but they will be required to take CAES1001 as supplementary credits and complete 240 credits for graduation from the University.

[2] Students are required to successfully complete the 6-credit specific Chinese language enhancement course, except for:
(a)   Putonghua-speaking students who should take CUND9002 (Practical Chinese and Hong Kong Society) or CUND9003 (Cantonese for Non-Cantonese Speaking Students); and
(b)   students who 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 may take a course in either Chinese language or Chinese culture in lieu. Students who are exempted from the requirement to take the Chinese language enhancement course are required to take a course in either Chinese language ("CHIN9501 Chinese as a Foreign Language I" or "CHIN9511 Cantonese as a Foreign Language I") or Chinese culture ("CHIN9521 The Fundamentals of Chinese Characters" or "CHIN9522 Exploration of Major Cultural Themes across Chinese History") offered by the Chinese Language Centre of the School of Chinese, to satisfy the Chinese language enhancement requirement.

FITE 15   The degree of BASc(FinTech) 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 BASc(FinTech) 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:

Class of honours	*GGPA range*
First Class	3.60 – 4.30
Second Class	(2.40 – 3.59)
Division One	3.00 – 3.59
Division Two	2.40 – 2.99
Third Class	1.70 – 2.39
Pass	1.00 – 1.69

FITE 16 Honours classification may not be determined solely on the basis of a candidate's Graduation GPA and the Board of Examiners for the BASc(FinTech) 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 FITE15 of the higher classification by not more than 0.1 Grade Point.

FITE 17 A list of candidates who have successfully completed all degree requirements shall be posted on School notice boards.

Bachelor of Arts and Sciences in Financial Technology [BASc(FinTech)]
(Subject to Approval)

SYLLABUS

The syllabus applies to students admitted in the academic year 2025-26 and thereafter under the four-year curriculum.

Curriculum

The Curriculum comprises 240 credits of courses as follows:

University Requirements
Students are required to complete:
    a) non-credit bearing Academic Communication in English course, unless they are exempted through having achieved Level 5 or above in English Language in the Hong Kong Diploma of Secondary Education Examination, or equivalent
    b) 6 credits in an English in the Discipline course and 6 credits in Chinese language enhancement course;
    c) 6 credits in artificial intelligence literacy;
    d) 24 credits of courses in the Common Core Curriculum comprising at least one course from any four different Areas of Inquiry; and
    e) non-credit bearing courses as required by the University.

BASc Core Courses
Students are required to complete 18 credits of BASc core courses.

Major in Financial Technology
Students are required to complete:
    a) Discipline Core Courses (54 credits)
    b) Discipline Elective Courses (30 credits)
    c) Capstone experience (12 credits)

Elective Courses
Students are required to complete 84 credits of elective courses offered by any department, except for Common Core Courses.

The details of the distribution of the above course categories are as follows:

University Requirements (42 credits)

Course code	Course	No. of credits
CAES1001	Academic Communication in English[1]	0
CAES9542	Technical English for Computer Science	6
	Chinese language enhancement course specified for the degree curriculum[2]	6
	Common Core[3]	24
	Artificial Intelligence Literacy courses	6
	Non-credit bearing course in national education and national security education, and any other non-credit bearing courses as may be required from time to time	0
	Total	**42**

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

²Candidates 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.

³Candidates have to complete 24 credits of courses in the Common Core Curriculum, comprising at least one course from any four different Areas of Inquiry.

BASc Core Courses (18 credits)

Course Code	Course	No. of credits
BASC9001	Approaching Interdisciplinarity: Knowledge Beyond Disciplines	6
BASC9002	Interdisciplinary Leadership and Sustainable Development	6
SDSTT1016	Data Science 101	6

Discipline Core Courses (54 credits)

Course Code	Course	No. of credits
COMP1117	Computer programming	6
FITE1010	Introduction to financial technologies	6
FITE2000	Foundations of FinTech Programming	6
FITE2010	Distributed ledger and blockchain	6
MATH1853	Linear algebra, probability and statistics**	6
ACCT1101	Introduction to financial accounting	6
ECON1210	Introductory microeconomics	6
FINA1310	Corporate finance	6
LLAW3069	Regulation of financial markets	6

** For candidates without taking Extended Module 1 or 2 in the Hong Kong Diploma of Secondary Education examinations, or equivalent, they have to take "MATH1011 University mathematics I" (6 credits) in the first semester of their first year of studies.

Discipline Elective Courses (30 credits)

6 credits of courses to be chosen from the following list:

Course Code	Course	No. of credits
LLAW3150	Introduction to information technology law	6
LLAW3244	Alternative Finance	6
LLAW3254	Law, Innovation, Technology, Entrepreneurship: Tech Startup Law	6
LLAW3255	LITE Lab: Emerging Technology and Business Models (Undergraduate)	6

24 credits of courses to be chosen from the following list:

Course Code	Course	No. of credits

COMP3278	Introduction to database management systems	6
COMP3314 / ELEC4544	Introduction to machine learning / Artificial intelligence and deep learning	6
COMP3320	Electronic commerce technology	6
COMP3322	Modern technologies on World Wide Web	6
COMP3340	Introduction to deep learning	6
COMP3355	Cyber security	6
COMP3362	Hands-on AI: experimentation and applications	6
FINA2320	Investments and portfolio analysis	6
FINA2322	Derivatives	6
FINA3350	Mathematical finance	6
FINA3353	Regulatory, operational and valuation issues in finance institutions	6
FINA4350	Text analytics and natural language processing in finance and fintech	6
FITE3010	Big data and data mining	6
FITE3012	E-payment and crypto-currency	6
FITE3013	Financial computing	6
ENGL1015	Introduction to English linguistics	6
ENGL2050	English corpus linguistics	6

Capstone Experience (12 credits)

Course Code	Course	No. of credits
FITE4801	Project	12

Electives (84 credits)

Any courses except Common Core Courses.

Elective Postgraduate Courses

Students may take up to three 6-credit postgraduate courses as elective courses, subject to the approval of the Programme Director of BASc(FinTech).

Summary of curriculum structure of BASc(FinTech)

Course Categories	No. of credits
University Requirements	42
BASc Core Courses	18
Major in Financial Technology Discipline Core Courses (54 credits) Discipline Elective Courses (30 credits) Capstone Experience (12 credits)	96
Electives	84
Total	**240**

COURSE DESCRIPTIONS

Candidates will be required to do the coursework in the respective courses selected. Not all courses are offered every semester.

University Requirements on Language Enhancement Courses

CAES9542.   Technical English for Computer Science (6 credits)

Running alongside Computer Science, Financial Technology, Data Science related final-year / capstone project courses, this one-semester, 6-credit course will build and consolidate students' ability to compose technical reports, and make technical oral presentations. The focus of this course is on helping students to report on the progress of their Final Year Project in an effective, professional manner in both written and oral communication. Topics include accessing, abstracting, analyzing, organizing and summarizing information; making effective grammatical and lexical choices; technical report writing; and technical presentations. Assessment is wholly by coursework.

Co-requisite: COMP3522 or COMP4801 or FITE4801
Assessment: 100% continuous assessment

University Common Core Curriculum

Successful completion of 24 credits of courses in the Common Core Curriculum, comprising one course from any four different Areas of Inquiry with not more than 24 credits of courses being selected within one academic year except where candidates are required to make up for failed credits:

- Science, Technology and Big Data
- Arts and Humanities
- Global Issues
- China: Culture, State and Society
- Artificial Intelligence

BASc Core Courses

BASC9001.   Approaching Interdisciplinarity: Knowledge Beyond Disciplines (6 credits)

How does knowledge emerge from different disciplines? What is the nature and limit of knowledge generated by different methods? This foundations course will open up an interdisciplinary discourse about knowledge building and integration in arts and humanities, social sciences, and sciences. It will consist of three parts:

1.   A philosophical and historical perspective of human knowledge.
In this part students will engage in debates about the nature of knowledge, ways of knowing, and integrating knowledge. Students will also study how certain forms of knowledge formation have become dominant in our society, and learn how humans have come to know what we know today about ourselves and our planet.

2.   From knowledge to judgement.
Knowledge is not just about information and facts. Knowledge calls for wisdom to interpret data and to make decisions about how to act upon them; it also requires critical reflections about the human condition and our roles and responsibilities as individuals and as a collective. In this part of the course, we will examine moral principles and ethical dilemmas during the process of building and responding to knowledge.

3.   Knowledge sharing.

We will look at traditional and creative methods of knowledge dissemination, and explore opportunities and challenges in knowledge transfer in the information society. This course will help students build a solid foundation on knowledge creation, sharpen their critical thinking skills when they confront new information and ideas, and prepare them to become effective analysts and communicators of knowledge.

Assessment: 100% coursework

BASC9002. Interdisciplinary Leadership and Sustainable Development (6 credits)

To be advised

SDST1016. Data Science 101 (6 credits)

The course introduces basic concepts and methodology of data science to junior undergraduate students. The teaching is designed at a level appropriate for all undergraduate students with various backgrounds and without pre-requisites.

Students will engage in a full data work-flow including collaborative data science projects. They will study a full spectrum of data science topics, from initial investigation and data acquisition to the communication of final results.

Specifically, the course provides exposure to different data types and sources, and the process of data curation for the purpose of transforming them to a format suitable for analysis. It introduces elementary notions in estimation, prediction and inference. Case studies involving less-manicured data are discussed to enhance the computational and analytical abilities of the students.

Topics include:
- Data management and exploration
* Computational thinking: Coding without computers
* Data visualisation with Tableau
* Machine Learning: Supervised Learning vs Unsupervised Learning
* Supervised Learning: Linear regression in Microsoft Excel
* Evaluation of Model: Overfitting & Underfitting

- Data analytics
* Statistics (1): data visualization and data exploratory analysis
* Statistics (2): random variables and probability
* Statistics (3): estimation of mean and variance, distributions, confidence interval and independent samples
* Statistics (4): hypothesis testing with p-value
* Statistics (5): regression models for forecasting

Impermissible combinations: not for students who have passed or already enrolled in any of the following courses: LING2071, SDST1005, SDST1015, SDST1018; and this course is exclusive for BASc and BA(HDT) students.

Assessment: 100% continuous assessment

Discipline Core Courses

ACCT1101. Introduction to financial accounting (6 credits)

The course will cover the principles of double entry book-keeping, the interpretation of financial statements, the issues raised by corporate regulation, and the use of management information for decision making.

Assessment: 50% continuous assessment, 50% examination

ECON1210.   Introductory microeconomics (6 credits)

An introduction to the basic concepts and principles of microeconomics – the study of demand and supply, consumer theory, cost and production, market structure, incentives, and resource allocation efficiency, political economy, and ethics and public policy.

Assessment: 50% continuous assessment, 50% examination

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.

Mutually exclusive with: ENGG1111 or ENGG1330 or IIMT2602
Assessment: 50% continuous assessment, 50% examination

FINA1310.   Corporate finance (6 credits)

This is an introductory finance course that develops the basic concepts and tools applicable to corporate financial decisions. Two main tasks of financial managers are studied: project evaluation and financing decisions. Specific topics include present value calculation, valuation of stocks and bonds, investment criteria and capital budgeting, risk and return, cost of capital, and capital structure. Corporate ethics is also incorporated in the discussion.

Prerequisite: ACCT1101
Mutually exclusive with: SDST3904
Assessment: 45% continuous assessment, 55% examination

FITE1010.   Introduction to financial technologies (6 credits)

An introduction to the basic concepts of financial technologies, such as e-payment system, cryptocurrency, blockchain, data mining, and artificial intelligence.

Assessment: 40% continuous assessment, 60% examination

FITE2000.   Foundations of FinTech Programming (6 credits)

This course introduces concepts and applications of basic data structures. Commonly used data structures, which include stacks and queues, trees, lists, arrays and graphs, will be discussed. Basic algorithms, both recursive and non-recursive, to manipulate these data structures will also be discussed.

Basic object-oriented programming principles, which are abstraction, encapsulation, inheritance and polymorphism, will be introduced. The practical work of the course will use an object-oriented programming language and corresponding data structure library. Students will be required to apply the data structures to solve practical and/or FinTech problems.

Prerequisite: COMP1117 or ENGG1330
Mutually exclusive with: COMP2396 and ELEC2543
Assessment: 50% continuous assessment, 50% examination

FITE2010.   Distributed ledger and blockchain (6 credits)

This course introduces basic theories of blockchain and distributed ledger, which includes basic cryptography, public key cryptosystem, distributed computing and consensus protocols. Financial applications of blockchain and distributed ledger will be discussed.

Prerequisites: FITE1010 or MATH1853 or MATH2101 or MATH1013; and COMP2119 or COMP2118 or ELEC2543 or FITE2000
Assessment: 40% continuous assessment, 60% examination

LLAW3069.   Regulation of financial markets (6 credits)

This course addresses the nature and operation of financial markets and the role of regulation. Coverage, based on comparative analysis and international standards, will include major financial sectors (banking, securities, insurance), supporting legal and institutional structures, and current issues and trends. Core themes are: the nexus between finance, technology and regulation (FinTech and RegTech), competition between globalisation and fragmentation, and the role of finance in crises and sustainable development.

Assessment: 10%   class   participation,   40%   group   presentation,   50%   take   home examination_____

MATH1853.   Linear algebra, probability and statistics (6 credits)

As the complementary course of MATH1851, students will be introduced to more topics of mathematics commonly applied in engineering so that students could be further enhanced with a concrete skill in mathematics underpinned for different engineering subjects. The course emphasizes mathematical concepts, principles, analysis, and their relationship to the modelling of engineering systems. Students could be furnished with the essential mathematical skills to analytically tackle some typical engineering problems to prepare for all the engineering subjects.

Prerequisite: Level 2 or above in Module 1, or Module 2 of HKDSE Mathematics or equivalent, or Pass in MATH1011, or take MATH1011 and MATH1853 concurrently in the same semester. (This course is exclusively for Engineering students.)

Assessment: 20% continuous assessment, 80% examination

Discipline Elective Courses

COMP3278.   Introduction to database management systems (6 credits)

This course studies the principles, design, administration, and implementation of database management

systems. Topics include: entity-relationship model, relational model, relational algebra, database design and normalization, database query languages, indexing schemes, integrity and concurrency control.

Prerequisite: COMP2119 or COMP2502 or ELEC2543 or FITE2000
Mutually exclusive with: IIMT3601
Assessment: 50% continuous assessment, 50% examination

COMP3314.   Introduction to machine learning (6 credits)

This course introduces basic concepts, algorithms, practices, tools, and applications of machine learning. Topics include classical methods in supervised learning (classification and regression), such as perceptrons, linear regression, decision trees, logistic regression, support vector machines, and KNN; classical methods in unsupervised learning, such as K-means clustering and principal component analysis; common practices in data pre-processing, feature selection, hyper-parameter tuning, and model evaluation; tools/libraries/APIs such as scikit-learn and multi/many-core CPU/GPU programming; applications such as flower species prediction, tumor cell classification, and handwritten digit recognition.

Prerequisites: MATH1853 or MATH2014 or MATH1013; and COMP2119 or COMP2118 or COMP2502 or ELEC2543 or FITE2000
Assessment: 50% continuous assessment, 50% examination

COMP3320.   Electronic commerce technology (6 credits)

This course aims to help students to understand the technical and managerial challenges they will face as electronic commerce becomes a new locus of economics activities. Topics include Internet and WWW technology, information security technologies, public-key crypto-systems, public-key infrastructure, electronic payment systems, and electronic commerce activities in different sectors.

Prerequisite: COMP3278
Assessment: 50% continuous assessment, 50% examination

COMP3322.   Modern technologies on World Wide Web (6 credits)

Selected network protocols relevant to the World Wide Web (e.g., HTTP, DNS, IP); World Wide Web; technologies for programming the Web (e.g, HTML, style sheets, PHP, JavaScript, Node.js.; other topics of current interest (AJAX, HTML5, web services, cloud computing).

Prerequisite: COMP1117 or ENGG1330
Mutually exclusive with: IIMT3663
Assessment: 50% continuous assessment, 50% examination

COMP3340.   Introduction to deep learning (6 credits)

This course provides practical skills and foundational knowledge in deep learning, emphasizing hands-on experience and computational principles. Students will explore key models, including Convolutional Neural Networks (CNNs), Transformer Networks, Generative Adversarial Networks (GANs), and

Diffusion Models. They will apply these models to real-world challenges like object detection, language tasks, and reinforcement learning. The course also covers cutting-edge applications, such as autonomous driving and AI in scientific research. By working directly with source code, students will understand model implementation and optimization deeply. The course culminates in a project where students apply their skills to a practical problem, showcasing their ability to utilize deep learning technologies.

Prerequisites: COMP2119 or COMP2118 or COMP2502 or ELEC2543 or FITE2000; and MATH1853 or MATH2014 or MATH1013
Mutually exclusive with: ELEC4544
Assessment: 50% continuous assessment, 50% examination

COMP3355.   Cyber security (6 credits)

This course introduces the principles, mechanisms and implementation of cyber security and data protection. Knowledge about the attack and defense are included. Topics include notion and terms of cyber security; network and Internet security, introduction to encryption: classic and modern encryption technologies; authentication methods; access control methods; cyber attacks and defenses (e.g. malware, DDoS).

Prerequisite: COMP2119 or COMP2118 or ELEC2543 or FITE2000
Mutually exclusive with: ELEC4641
Assessment: 50% continuous assessment, 50% examination

COMP3362.   Hands-on AI: experimentation and applications (6 credits)

This course comprises two main components: students first acquire the basic know-how of the state-of-the-art AI technologies, platforms and tools (e.g., TensorFlow, PyTorch, scikit-learn) via example-based modules in a self-paced learning mode. Students will then identify a creative or practical data-driven application and implement an AI-powered solution for the application as the course project. Students will be able to experience a complete AI experimentation and evaluation cycle throughout the project.

Prerequisite: COMP3314
Mutually exclusive with: COMP3359
Assessment: 100% continuous assessment

ELEC4544. Artificial intelligence and deep learning (6 credits)

This course aims at providing students with a basic understanding on deep learning technology. The topics to be covered are neural network, backpropagation, deep auto-encoder, Restricted Boltzmann Machines (RBM), Convolutional Neural Network (CNN), Multi-Layer Perceptron (MLP), strategies for training deep architectures, handling overfitting, cross-validation, meta-heuristic searching for parameter tuning. This is followed by hands-on implementation of deep learning algorithms using Python, with applications ranging from image classification, speech processing, and financial data analysis.

After finish the course, students will be able to
1. Master the basic concept of deep learning in artificial intelligence.
2. Master the Python programing language for implementing deep learning model.
3. Apply deep learning in novel applications.

Prerequisite: ELEC3241 Signals and linear systems

Assessment: 55% continuous assessment, 45% examination

FINA2320.   Investments and portfolio analysis (6 credits)

This course introduces students to the fundamental principles of investments and to major issues currently of concern to all investors. The concepts and skills developed from this course enable students to conduct a sophisticated assessment of current issues and debates covered by both the popular media as well as more-specialized finance journals. We emphasize equity investments and the main topics include: portfolio theory, equilibrium in capital markets, equity valuation, portfolio performance evaluation, and relevant institutional details.

Prerequisites: ECON1210 and FINA1310
Co-requisite: ECON1280 or SDST1600 or SDST1601 or SDST1602 or SDST1603 or SDST2601 or SDST2901 or MATH1853
Mutually exclusive with: SDST 3609 and SDST 3952
Assessment: 50% continuous assessment, 50% examination

FINA2322.   Derivatives (6 credits)

The major objective of this course is to promote an in-depth understanding of basic derivatives. Derivatives have become a popular hedging and investment tool over the last several decades and derivatives concepts are required for every advanced finance topic. This course provides students with a framework to understand the fundamental concepts of derivative products (forward and futures, options, swaps, and basic structured products), to develop the necessary skills used in valuing derivative contracts, and to understand a wide variety of issues related to risk management and investment decisions using derivatives.

Prerequisites: ECON1210 and FINA1310
Mutually exclusive with: IMSE4110 and SDST3618 and SDST3905 and SDST3910
Remarks: NOT OPEN to students taking or having taken MATH3906
Assessment: 45% continuous assessment, 55% examination

FINA3350.   Mathematical finance (6 credits)

This course provides students with the necessary mathematical techniques used in continuous-time finance. It covers stochastic calculus, partial differential equation and applied probability. After taking this course, one should be able to fully understand no-arbitrage theory, the Black-Scholes equation, risk-neutral probability and martingales. The purpose of this course is to lay down a solid mathematical foundation for students to learn more advanced topics in financial engineering, such as exotic options, interest rate derivatives and credit risk models.

Prerequisite: FINA2322
Mutually exclusive with: MATH3906
Assessment: 40% continuous assessment, 60% examination

FINA3353.   Regulatory, operational and valuation issues in finance institutions (6 credits)

This course examines with students' practical issues involving financial institutions, with a focus on banks. These include how banks shapes and, in the meantime, are bounded by regulations the regulatory

environment. In turn, how the macro regulatory environment then transformed into operational practices in financial markets. The course will also go into how these issues are incorporated into models for analysis and valuation purposes. The course will be very practical, putting a blend of classroom concepts, theories and frameworks to work, preparing students for real life situations.

Prerequisite: FINA2320
Assessment: 50% continuous assessment, 50% examination

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FINA4350.   Text analytics and natural language processing in finance and fintech (6 credits)

This course covers the main elements of natural language processing (NLP), text analytics, and text mining, providing students with a foundation in collecting, managing, and analyzing textual data with financial and economic applications in mind, such as FinTech. Examples of potential applications include understanding and responding to sentiment in financial newspapers and social media, using social media to improve performance in asset/investment management, due diligence, Fed watching, monitoring of company events, and detecting insider trading. Although students write their own computer programs in this course, they are not required to implement most algorithms from scratch. Instead, the focus of this course is on how to use existing state-of-the-art open-source software libraries and how to apply them in a financial context. This course consists of three parts. In the first part, we work with real-world textual data sets to obtain proficiency in collecting, importing, organizing, and cleaning textual data from sources related to finance and economics. Among others, we cover web scraping, textual corpora, text processing, tokenization, stemming, and stop word removal. In the second part we delve into a more detailed analysis of NLP, text analytics, and machine learning with a particular focus on FinTech. For instance, we examine bag-of-words, word weighting schemes, document classification, document clustering, sentiment analysis, and topic models. The third part consists of summarizing, displaying, and visualizing results obtained from NLP and text analytics for applications in finance and economics.

Assessment: 70% continuous assessment, 30% examination

FITE3010.   Big data and data mining (6 credits)

The course will study some advanced topics and techniques in big data, with a focus on the algorithmic and system aspects. It will provide students with both theoretical and hands-on experience in big data and data mining. Topics include MapReduce, textual data management, graph data management, uncertain data management, association rule mining, and state-of-the-art data mining techniques.

Prerequisites: FITE1010 or MATH1853 or MATH2101 or MATH1013; and COMP2119 or COMP2118 or COMP2502 or ELEC2543 or FITE2000
Mutually exclusively with: COMP3323

Assessment: 50% continuous assessment, 50% examination

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FITE3012.   E-payment and crypto-currency (6 credits)

The course covers banking systems, e-payment security, foreign exchange, Internet banking, wireless payments, stored-value cards, micropayments, peer-to-peer payments, electronic and crypto-currencies such as Bitcoin, large-scale B2B payments and the future of money.

Prerequisites: FITE1010 or MATH1853 or MATH2101 or MATH1013; and COMP2119 or COMP2118 or ELEC2543 or FITE2000

Assessment: 40% continuous assessment, 60% examination

FITE3013.   Financial computing (6 credits)

This module aims to give the students a basic understanding of different aspects of financial computing in the investment banking area, and is a combination of financial product knowledge, financial mathematics and spreadsheet based financial modelling techniques. This course will introduce the financial mathematics concepts, product pricing basics and modern risk management in practice. Other topics include yield curve construction in practice, financial modelling and modern risk management practice.

Prerequisites: FITE1010 or MATH1853 or MATH2101 or MATH1013; and COMP2119 or COMP2118 or ELEC2543 or FITE2000
Assessment: 50% continuous assessment, 50% examination

LLAW3150.   Introduction to information technology law (6 credits)

This is a basic course in the LLM IP/IT stream introducing students to the information technology and the legal issues arising from the technology. The course will begin by examining the essential features of information technology and the characteristics of the Internet, followed by investigations into the legal issues created by the technology. Discussions will primarily be based on the laws of Hong Kong, with references made to the laws of other leading jurisdictions. Topics to be covered include, but are not not limited to, the following:

- Introduction to information technology and the Internet
- Intellectual property issues
- Illegal contents on the Internet (e.g. defamatory or obscene materials)
- Online trading
- Data privacy
- E-crimes
- Jurisdictional issues

Assessment: 100% research paper

LLAW3244.   Alternative Finance (6 credits)

Innovative technology creation and development, including financial technology (FinTech) and regulatory technology (RegTech), are increasingly being used by financial institutions and their regulators to enhance regulatory compliance in and supervision of a sophisticated and fast-changing financial sector.

The course will critically evaluate the claim that FinTech portmanteau of finance and technology, including blockchain, artificial intelligence, robo adviser solution, big data and automated suspicious transaction monitoring technology systems, has the ability to revolutionise financial inclusion. Furthermore, it examines whether and how RegTech can be used by regulators for tracking and monitoring financial institutions compliance activities. Specifically, RegTech aims to more effectively regulate new commercial transactions facilitated by FinTech, such as payments made through mobile devices and equity crowdfunding through the internet portals which are cornerstones of the course on alternative finance (i.e. internet financing).

The course sheds light on the legal/regulatory requirements and supervisory and policy measures towards FinTech alternative finance at both local and international levels. These requirements and measures will be further compared with standards set by international regulatory bodies such as the Global Partnership for Financial Inclusion, the G20, the OECD, the Financial Stability Board and the Bank for International Settlements. Combining supervisory approaches—for instance, the principle-based approach and the cost-benefit approach—with academic approaches, the course promotes and enables technical, theoretical, comparative, and interdisciplinary studies for students who are interested in or preparing to enter a FinTech-related career. The course is also practical and industry focused as it reflects on and closely follows industry reports such as KPMG's annual banking and anti-money laundering reports, along with Deloitte's RegTech and FinTech survey reports. Designed to enhance creativity, critical thinking and deep learning, the course will foster an intimate understanding of regulations and policies on FinTech, RegTech and SupTech. Topics and issues covered in this course are diverse and wide-ranging such as financial inclusion and digital financial inclusion, the digital banking model (implemented by virtual banks, which are also known as digital banks), FinTech and RegTech (with subordinated themes such as Sandbox, Open Banking, Application Programming Interface, and Wealth Management Technology), P2P Lending, Equity Crowdfunding, Payments and Payment Technology (including Central Bank Digital Currency and Stablecoins).

The course will begin by expounding the role of FinTech in both the shadow banking and traditional banking systems, followed by an exploration of the types of FinTech-enabled products and payment services such as crowdfunding and P2P lending, and ending with a forward-looking approach in tackling some critical and timely issues related to FinTech, including, but not limited to, financial democratisation, improving access to financial systems, the sharing economy and privacy protection for consumers.

The course is distinctively interdisciplinary and methodically strong, designed for students with different academic backgrounds. It is particularly relevant for those with department major(s) in Law (including BBA (Law) & LLB and BSocSc (Govt & Laws) & LLB), Financial Technology, Computer Science, Entrepreneurship, Design and Innovation, Marketing and Wealth Management, to name a few.

Assessment: 30% oral presentation, 20% research topic and preliminary research proposal, 50% research paper

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LLAW3254.   Law, Innovation, Technology, Entrepreneurship: Tech Startup Law (6 credits)

This course focuses on the legal environment impacting entrepreneurs, startups and new innovative businesses and ideas. It addresses the core aspects of setting up a new business, including legal structures, hiring staff, protecting intellectual property, raising finance, licensing considerations, data protection and usage, and cross-border operations. It is designed for upper year students in any discipline who are considering a new venture or already involved in a startup or innovative project.

Assessment: 80% short assignments, 20% class participation

LLAW3255.   LITE Lab: Emerging Technology and Business Models (Undergraduate) (6 credits)

This is an experiential learning course in which students will be placed with startups and innovation labs in order to gain an understanding of the environment in which such firms operate. It will include a taught as well as an assessed component.

Assessment: 100% internship report

ENGL1015.   Introduction to English linguistics (6 credits)

This survey course offers a comprehensive first introduction to the linguistic study of English, covering the various levels of analysis (and the core branches of linguistics that study them): sounds (phonetics and phonology), words (morphology and lexicology), meanings (semantics and pragmatics), grammar (syntax), text and discourse (discourse analysis). It will also offer a first introduction to a number of key aspects of language use (and the linguistic disciplines dealing with them): language acquisition and processing (psycholinguistics), language change (historical linguistics), regional and social variation (sociolinguistics), [literary] style (stylistics). Finally, the course will introduce a number of methodological and theoretical approaches one can take in the academic study of a language, and consequently also in English language research.

Prerequisite: a minimum Level 5 in English Language in the Hong Kong Diploma of Secondary Education (HKDSE) examination, or an equivalent score in another recognized English proficiency test for ENGL courses
Assessment: 100% coursework.

ENGL2050.   English corpus linguistics (6 credits)

Corpus linguistics is a rapidly-developing methodology in the study of language. It exploits the power of modern computer technology to manipulate and analyse large collections of naturally occurring language ('corpora'). This course will introduce students to the use of computers and computerized corpora as tools for exploring the English language.

Prerequisite: ENGL1015 or at least 1 introductory-level ENGL course under the Language and Communication Stream.
Assessment: 100% coursework.

Capstone Experience

FITE4801.   Project (12 credits)

Student individuals or groups, during the final year of their studies, undertake full end-to-end development of a substantial project, taking it from initial concept through to final delivery. The project will be the application of technology to finance discipline.

Assessment: 100% continuous assessment