THE CHINESE UNIVERSITY OF HONG KONG
Department of Information Engineering

Suggested Study Plan for
HKDSE, International and Mainland Entrants Admitted to CUHK in 2025-26

University Core Requirements	
English	8
Chinese	5
University GE Foundation	6
University GE: Areas A+C+D	7
College GE	6
Understanding China	1
Hong Kong in the Wider Constitutional Order	1
Digital Literacy and Computational Thinking	3
PE	2
	39
Major Requirements	
Faculty Package	9
Foundation Courses	11
Major Required	39
Major Electives	16
	75
Free Electives	**9**
	123 (Minimum unit requirement for graduation)

Major Programme Requirement

Students are required to complete a minimum of 75 units of courses as follows:

		Units
1.	Faculty Package: ENGG1110/ESTR1002, ENGG1111, ENGG1120/ESTR1005, ENGG1125/ESTR1007[a]	9
2.	Foundation Courses: ENGG1130/ESTR1006[b], ENGG2440/ESTR2004, ENGG2720/ESTR2014, IERG1080	11
3.	Required Courses:	
(a)	CSCI2100/ESTR2102, IERG1000, IERG2051/ESTR2302, IERG2060/ESTR2304, IERG2080/ESTR2306, IERG2310/ESTR2300, IERG2470/ESTR2308, IERG2820, 3060, IERG3080/ESTR3308, IERG3310/ESTR3310, IERG3800, 3810, 3820	32
(b)	IERG3840[c] or IERG3842	1
(c)	Research Component Courses[d]: IERG4998, 4999	6
4.	Elective Courses: Out of the 16 Elective Course units, at least **13 units** should be from the following courses: CSCI3150/ESTR3102, CSCI3160/ESTR3104, ENGG1820, IERG3010/ESTR3300, IERG3050, 3070, IERG3280/ESTR3302, IERG3300/ESTR3304, IERG3320/ESTR3306, IERG3830, 4004, IERG4030/ESTR4320, IERG4060, IERG4080/ESTR4312, IERG4090/ESTR4302, IERG4100/ESTR4304,	16

IERG4110/ESTR4314, IERG4120/ESTR4328, IERG4130/CSCI4130/ESTR4306, IERG4150/ESTR4322, IERG4160, IERG4180/ESTR4308, IERG4190, 4210, 4220, 4230, 4240, IERG4300/ESTR4300, IERG4320/ESTR4324, IERG4330/ESTR4316, IERG4340, 4350, IERG4360/ESTR4326, IERG4831, 4841, 4851, 5020, IERG5040/ENGG5392, IERG5050, 5090, IERG5100/ENGG5303, IERG5110, 5130, 5140, IERG5154/ENGG5301, IERG5200, 5230, IERG5240/ENGG5383, IERG5250, 5254, 5280, 5290, IERG5300/ENGG5302, IERG5310, 5320, 5330, 5340, 5350, 5360, 5380, 5400, 5450, 5460, 5470, 5590, 5670

The remaining units, if any, can be fulfilled by any AIST/BMEG/CENG/CSCI/EEEN/ELEG/ENGG/ESTR/FTEC/MAEG/SEEM course(s) at 3000 and above level.

Streams
Students may choose not to specialize in any stream or to specialize in no more than two streams and complete a minimum of 12 units of courses prescribed by the stream.

Big Data: Systems and Applications
CSCI3320, CSCI4180/ESTR4106, CSCI4190, ELEG5491, IERG3320/ESTR3306, IERG4080/ESTR4312, IERG4120/ESTR4328, IERG4160, 4230, IERG4300/ESTR4300 (required), IERG4320/ESTR4324, IERG4330/ESTR4316, IERG5050, 5130, 5250, 5350, 5450, 5460, 5470, 5670
Telecommunications
IERG3010/ESTR3300, IERG3280/ESTR3302, IERG3300/ESTR3304, IERG4030/ESTR4320, IERG4060, IERG4100/ESTR4304, IERG4110/ESTR4314, IERG4130/CSCI4130/ESTR4306, IERG4230, 4240, 4340, 4851, 5020, IERG5040/ENGG5392, IERG5100/ENGG5303, IERG5110, 5200, 5230, 5280, 5330
Cyber Security
CSCI3150/ESTR3102, IERG3070, IERG4004, IERG4120/ESTR4328, IERG4130/CSCI4130/ESTR4306 (required), IERG4150/ESTR4322, IERG4210, 4220, 4350, IERG4360/ESTR4326, IERG4851, IERG5240/ENGG5383, IERG5310, 5320, 5360, 5590
Networked Systems and Applications
At least 3 units from CSCI3150/ESTR3102, IERG3070.
The remaining units from IERG3050, IERG3280/ESTR3302, IERG3300/ESTR3304, IERG4080/ESTR4312, IERG4090/ESTR4302, IERG4130/CSCI4130/ESTR4306, IERG4180/ESTR4308, IERG4190, 4210, 4240, 4831, 4841, 4851, 5090, 5250, 5280, 5470
Information Science
CSCI3160/ESTR3104, IERG3010/ESTR3300, IERG3050, IERG3280/ESTR3302, IERG3300/ESTR3304, IERG4100/ESTR4304, IERG4190, IERG4300/ESTR4300, IERG4320/ESTR4324, IERG5154/ENGG5301, IERG5200, 5254, 5290, 5380, 5400

Total: 75

In addition to fulfilling the above Major Programme Requirement, students may also challenge themselves by taking the following stream offered by the Faculty:

Engineering Leadership, Innovation, Technology and Entrepreneurship (ELITE) Stream [e]
Elective Courses:
15 units of courses [f]:
i) 12 units of ESTR courses of which at most 6 units of courses at 1000 or 2000 level and at least 6 units of courses at 3000 or 4000 level [g]
ii) 3 units of AIST/BMEG/CENG/CSCI/EEEN/ELEG/ENGG/IERG/MAEG/SEEM research postgraduate courses at 5000 level [h]

Explanatory Notes:
1. AIST/BMEG/CENG/CSCI/EEEN/ELEG/ENGG/ESTR/FTEC/IERG/MAEG/SEEM required and major elective courses at 2000 and above level will be included in the calculation of Major GPA for honours classification excluding courses in Faculty Package and Foundation courses.

2. Students satisfying all the requirements of a stream (except the ELITE Stream, which will be officially recorded on the academic transcript) will be given a certifying letter upon request. For details, please refer to the Department for information.

3. i) Students who did not sit for any Physics subject public examination are required to take PHYS1003 in Term 1 or ENGG1310 in Term 2 in the first year of study.

ii) Students who have sat for a Physics subject public examination and obtained grade 4 or above in HKDSE Physics; or grade 4 or above in IB Physics (HL or SL); or grade C or above in GCE AL/AS Physics; or a score above 70% of the full score of the Physics-related component in JEE/Gaokao (mainland China), do not need to take any additional Physics course.

iii) Students who have sat for a Physics subject public examination but did not meet the minimum grade/score requirements in 3ii) are required to take ENGG1310 in Term 2 in the first year of study.

[a] i) JUPAS admittees without HKDSE Mathematics Extended Modules I or II are required to take ENGG1040 before they can take ENGG1125.

ii) JUPAS admittees with the following HKDSE results do not need to take ENGG1040 and therefore will not be invited for the Mathematics Placement Test:
- Level 5** in Mathematics Extended Module I; or
- Level 5* or above in Mathematics Extended Module II.

iii) Non-JUPAS admittees with the following public examination results do not need to take ENGG1040 and therefore will not be invited for the Mathematics Placement Test:
- Grade 6 or above in IB Mathematics Analysis and Approaches (HL); or
- Grade 7 in IB Mathematics Applications and Interpretation (HL); or
- Grade A* in GCE-AL Further Mathematics.

iv) Other admittees except those specified above, are required to attend a Mathematics Placement Test. Students who fail or are absent from the Placement Test will be required to take ENGG1040 before they can take ENGG1125.

[b] Students who fail ENGG1125 in Term 1 will have to retake the course in Term 2. The pre-assigned ENGG1130 in Term 2, will therefore be dropped.

[c] CSCI2720 is not for students who have taken IERG3840, while the former is a required course for Minor in Computer Science. Students pursuing Minor in Computer Science should take IERG3842 to fulfill the Major Programme Requirement of Information Engineering.

[d] Students who have declared to specialize in the ELITE Stream will be required to complete 6 units of ESTR4998 and 4999 to substitute for IERG4998 and 4999.

[e] Details of the entrance and coursework requirements, and declaration procedures for the ELITE Stream can be found at the ELITE website (www.erg.cuhk.edu.hk/erg/elite).
Non-ELITE Engineering students may be allowed to take ESTR courses. Students are required to seek approval from their respective Major Programmes for using ESTR courses taken to fulfill the Major Programme Requirement. Details are available at the ELITE website.

[f] Students can use up to 9 units of courses taken to fulfill both the Major Programme requirements and the elective requirements of the ELITE Stream. Item 3(c) Research Component Courses will not be included in these 9 units. A full list of ESTR courses is available at the ELITE website.

[g] Students can use AIST/BMEG/CENG/CSCI/EEEN/ELEG/ENGG/IERG/MAEG/SEEM research postgraduate courses at 5000 level to substitute for ESTR courses at 3000 or 4000 level, subject to the approval of the Stream Director and the Associate Dean (Education).

[h] The requirement of at least 3 units of Engineering courses at 5000 level is a requirement for the ELITE Stream only. It should not be interpreted as a requirement of the Major Programme.

		Recommended Course Pattern	Units
THE FIRST YEAR	**Term 1**	Faculty Package: - ENGG1110/ESTR1002, ENGG1111 - ENGG1125/ESTR1007[a] Major Required: - IERG1000 Digital Literacy and Computational Thinking: ENGG1003 College General Education: 1 course Language: CHLT1001 Physical Education: 1 course	 3 3 1 3 3 3 1
		Term total	**17**
	Term 2	Faculty Package: - ENGG1120/ESTR1005 Foundation: - ENGG1130/ESTR1006 - IERG1080 Major Required: - IERG2080/ESTR2306 University General Education Foundation: UGFH/UGFN (1 course) † Language: ELTU1001 Physical Education: 1 course	 3 3 3 3 3 3 1
		Term total	**19**
THE SECOND YEAR	**Term 3**	Foundation: - ENGG2440/ESTR2004 - ENGG2720/ESTR2014 Major Required: - CSCI2100/ESTR2102 - IERG2051/ESTR2302 - IERG2060/ESTR2304 - IERG2820 Language: CHLT1002	 3 2 3 3 3 1 2
		Term total	**17**
	Term 4	Major Required: - IERG2310/ESTR2300 - IERG2470/ESTR2308 - IERG3310/ESTR3310 - IERG3820 University General Education Foundation: UGFH/UGFN (1 course) † University General Education: Area A/C/D (1 course) Language: ELTU2014	 3 3 3 1 3 2-3 3
		Term total	**18-19**

† *Students may take the University General Education Foundation class in Summer Session.*

THE THIRD YEAR	**Term 5**	Major Required: - IERG3080/ESTR3308 - IERG3800 - IERG3840/3842* Free Elective(s): 1 course Major Elective(s): 1 course University General Education: Area A/C/D (1 course)	 3 1 1 3 3 2-3
		Term total	**13-14**
	Term 6	Major Required: - IERG3060 - IERG3810 Major Elective(s): 2 courses University General Education: Area A/C/D (1 course) Language: ELTU3014	 3 1 5-6 3 2
		Term total	**14-15**
THE FOURTH YEAR	**Term 7**	Major Required: IERG4998 Major Elective(s): 2 courses College General Education: 1 course Understanding China	3 5-6 3 1
		Term total	**12-13**
	Term 8	Major Required: IERG4999 Major Elective(s): 1 course Hong Kong in the Wider Constitutional Order Free Elective(s): 2 courses	3 3 1 6
		Term total	**13**
		Faculty Package *Foundation* *Major Required* *Major Electives* *University Core Requirement* *Free Electives*	*9* *11* *39* *16* *39* *9*
		Minimum unit requirement for graduation	*123*

[a] Non-JUPAS and JUPAS admittees with HKDSE Mathematics Extended Modules I or II are required to attend a Mathematics Placement Test. Students who fail or are absent from the Placement Test will be required to take ENGG1040 before they can take ENGG1125. (For details, please refer to explanatory notes on page 2)

* *CSCI2720 is not for students who have taken IERG3840, while the former is a required course for Minor in Computer Science. Students pursuing Minor in Computer Science should take IERG3842 to fulfill the Major Programme Requirement of Information Engineering.*

Course List

(Note: For quick reference of the courses appeared on the study plan(s).
Please refer to CUSIS for course information)

Course Code	*Course Title*	*Unit(s)*
CHLT1001	University Chinese I	3
CHLT1002	University Chinese II	2
CSCI2100/ESTR2102	Data Structures	3
CSCI3150/ESTR3102	Introduction to Operating Systems	3
CSCI3160/ESTR3104	Design and Analysis of Algorithms	3
CSCI3320	Fundamentals of Machine Learning	3
CSCI4180/ESTR4106	Introduction to Cloud Computing and Storage	3
CSCI4190	Introduction to Social Networks	3
ELEG5491	Introduction to Deep Learning	3
ELTU1001	Foundation English for University Studies	3
ELTU2014	English for Engineering I	3
ELTU3014	English for Engineering II	2
ENGG1003	Digital Literacy and Computational Thinking	3
ENGG1040	Foundations in Engineering Mathematics	3
ENGG1110/ESTR1002	Problem Solving by Programming	3
ENGG1111	AI Literacy Workshop	0
ENGG1120/ESTR1005	Linear Algebra for Engineers	3
ENGG1125/ESTR1007	Single Variable Calculus for Engineers	3
ENGG1130/ESTR1006	Multivariable Calculus for Engineers	3
ENGG1310/ESTR1003	Engineering Physics: Electromagnetics, Optics and Modern Physics	3
ENGG1820	Engineering Internship	1
ENGG2440/ESTR2004	Discrete Mathematics for Engineers	3
ENGG2720/ESTR2014	Complex Variables for Engineers	2
ENGG2740/ESTR2016	Differential Equations for Engineers	2
ENGG2780/ESTR2020	Statistics for Engineers	2
ENGG5301	Information Theory	3
ENGG5302	Random Processes	3
ENGG5303	Advanced Wireless Communications	3
ENGG5383	Applied Cryptography	3
ENGG5392	Lightwave System Technologies	3
IERG1000	Introduction to Information Engineering	1
IERG1080	Introduction to Python for Engineering Applications	3
IERG1810	Electronic Circuit Design Laboratory	1
IERG2051/ESTR2302	Signals and Systems	3
IERG2060/ESTR2304	Basic Analog and Digital Circuits	3
IERG2080/ESTR2306	Introduction to Systems Programming	3
IERG2310/ESTR2300	Principles of Communication Systems	3
IERG2470/ESTR2308	Probability Models and Applications	3
IERG2820	Electronic Circuit Design Laboratory	1
IERG3010/ESTR3300	Digital Communications	3
IERG3050	Simulation and Statistical Analysis	3
IERG3060	Microcontrollers and Embedded Systems	3
IERG3070	Operating Systems in Practice: A Linux Perspective	3
IERG3080/ESTR3308	Information and Software Engineering Practice	3
IERG3280/ESTR3302	Networks: Technology, Economics, and Social Interactions	3
IERG3300/ESTR3304	Introduction to Stochastic Processes	3
IERG3310/ESTR3310	Computer Networks	3
IERG3320/ESTR3306	Social Media and Human Information Interaction	3

Course Code	*Course Title*	*Unit(s)*
IERG3800	Information Infrastructure Design Lab	1
IERG3810	Microcontrollers and Embedded System Laboratory	1
IERG3820	Communications Laboratory	1
IERG3830	Product Design and Development	3
IERG3840	Web Application Development Project	1
IERG3842	Mobile Network Application Development Project	1
IERG4004	E-payment Systems and Cryptocurrency Technologies	3
IERG4030/ESTR4320	Optical Communications	3
IERG4060	Real-time Embedded Systems	3
IERG4080/ESTR4312	Building Scalable Internet-based Services	3
IERG4090/ESTR4302	Networking Protocols and Systems	3
IERG4100/ESTR4304	Wireless Communication Systems	3
IERG4110/ESTR4314	Hands-on Wireless Communication	3
IERG4120/ESTR4328	Functional Programming	3
IERG4130/CSCI4130/ESTR4306	Introduction to Cyber Security	3
IERG4150/ESTR4322	Introduction to Cryptography	3
IERG4160	Image and Video Processing	3
IERG4180/ESTR4308	Network Software Design and Programming	3
IERG4190	Multimedia Coding and Processing	3
IERG4210	Web Programming and Security	3
IERG4220	Secure Software Engineering	3
IERG4230	Introduction to Internet of Things	3
IERG4240	Positioning Principles and Technologies	3
IERG4300/ESTR4300	Web-scale Information Analytics	3
IERG4320/ESTR4324	Data Science in Practice	3
IERG4330/ESTR4316	Programming Big Data Systems	3
IERG4340	Emerging Technologies in Information Engineering	3
IERG4350	Cloud Computing Security	3
IERG4360/ESTR4326	Blockchain and Applications	3
IERG4831	Networking Laboratory I	2
IERG4841	Networking Laboratory II	2
IERG4851	Cyber Security Laboratory	1
IERG4998	Final Year Project I	3
IERG4999	Final Year Project II	3
IERG5020	Telecommunication Switching and Network Systems	3
IERG5040/ENGG5392	Lightwave System Technologies	3
IERG5050	AI Foundation Models, Systems and Applications	3
IERG5090	Advanced Networking Protocols and Systems	3
IERG5100/ENGG5303	Advanced Wireless Communications	3
IERG5110	Signal Processing in Wireless Communications and Sensing	3
IERG5130	Probabilistic Models and Inference Algorithms for Machine Learning	3
IERG5140	Lightwave Networks	3
IERG5154/ENGG5301	Information Theory	3
IERG5200	Channel Coding and Modulation	3
IERG5230	Algorithms and Realization of Internet of Things Systems	3
IERG5240	Applied Cryptography	3
IERG5250	Edge AI and Applications	3
IERG5240/ENGG5383	Network Information Theory	3
IERG5250	Edge AI and Applications	3
IERG5254	Network Information Theory	3
IERG5280	Mobile Networking	3
IERG5290	Network Coding Theory	3
IERG5300/ENGG5302	Random Processes	3

Course Code	*Course Title*	*Unit(s)*
IERG5310	Security and Privacy in Cyber Systems	3
IERG5320	Digital Forensics	3
IERG5330	Network Economics	3
IERG5340	IT Innovation and Entrepreneurship	3
IERG5350	Reinforcement Learning	3
IERG5360	Program Representation, Modeling and Understanding for Software Security	3
IERG5380	Quantum Information Processing	3
IERG5400	Theory of Probability	3
IERG5450	AI for Science	3
IERG5460	Multimodal Machine Learning	3
IERG5470	Convex and Stochastic Optimization and their Applications	3
IERG5590	Advanced Topics in Blockchain	3
IERG5670	Computational Imaging Systems and Algorithms	3
MATH1020	General Mathematics	3
PHYS1003	General Physics for Engineers	3
MATH1510	Calculus for Engineers	3
UGCP1001	Understanding China	1
UGCP1002	Hong Kong in the Wider Constitutional Order	1
UGFH1000	In Dialogue with Humanity	3
UGFN1000	In Dialogue with Nature	3