

**THE CHINESE UNIVERSITY OF HONG KONG**  
**Department of Information Engineering**

**Suggested Study Plan for Broad-based entrants admitted to CUHK in 2016**

**University Core Requirements**

English	9
Chinese	6
Foundation GE	6
University GE	9
College GE	6
PE	2
IT	1 (exempt)

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**39**

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**Major Requirements**

Faculty Package	9
Foundation Science	9
Foundation Math	12
Major Required	22
Major Electives	17
Major FYP	6

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**75**

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**Free Electives**            **9**

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**123** (Minimum Unit Requirement for Graduation)

	<b>Recommended Course Pattern</b>	<b>Units</b>
<b>First Year of Attendance</b>	<b><u>1<sup>st</sup> term</u></b>	
	Faculty Package: ENGG1100/1110/ESTR1000/1002	3
	Language: CHLT1100	3
	Major Required: MATH1510	3
	PHYS1003/1110	3
	Physical Education: 1 course	1
	College General Education: 1 course	3
		<b>16</b>
	<b><u>2<sup>nd</sup> term</u></b>	
	Faculty Package: ENGG1100/1110/ESTR1000/1002	3
Language: ELTU1001	4	
Major Required: ENGG1410/ESTR1004	3	
Any one from CHEM1380/CSCII1120/1130/ENGG1310/ ESTR1003/1100/1102/LSCI1001/1003/PHYS1110	3	
Physical Education: 1 course	1	
General Education: UGFH/UGFN (1 course)	3	
	<b>17</b>	

<b>Second Year of Attendance</b>	<b><u>1<sup>st</sup> term</u></b> Language: CHLT1200 Major Required: ENGG2460/ESTR2010 CSCI1140 IERG2060 General Education: UGFH/UGFN (1 course) Free Elective: 1 course	3 3 1 3 3 3
		<b>16</b>
	<b><u>2<sup>nd</sup> term</u></b> Faculty Package: ENGG2601, 2602 Language: ELTU2014 Major Required: ENGG2430/ESTR2002 CSCI2100/ESTR2102 IERG2051/ESTR2302 General Education: UGE (1 course)	3 3 3 3 3 3
		<b>18</b>
<b>Third Year of Attendance</b>	<b><u>1<sup>st</sup> term</u></b> Major Required: ENGG2310/ESTR2300 IERG3080 IERG3310 IERG3800 IERG3820 Major Elective: 1 course General Education: UGE (1 course)	3 3 3 1 1 3 3
		<b>17</b>
	<b><u>2<sup>nd</sup> term</u></b> Language: ELTU3014 Major Required: IERG3060 IERG3810 Major Elective(s): 2 courses General Education: UGE (1 course) Free Elective: 1 course	2 3 1 6 3 3
		<b>18</b>

<b>Fourth Year of Attendance</b>	<b>1<sup>st</sup> term</b>	
	Major Required: IERG4998/ESTR4998	3
	Major Elective(s): 2 courses	6
	College General Education: 1 course	3
		<b>12</b>
	<b>2<sup>nd</sup> term</b>	
	Major Required: IERG4999/ESTR4999	3
	Major Elective: 1 course	2
	Free Elective: 1 course	3
		<b>8</b>
<b>Total (including Faculty Package):</b>		38(U)+75(M)+9(F)=122 (1-unit IT is exempted)

### Course List

<i>Course Code</i>	<i>Course Title</i>	<i>Unit(s)</i>
CHEM1380	Basic Chemistry for Engineers	3
CSCI1120/ESTR1100	Introduction to Computing Using C++	3
CSCI1130/ESTR1102	Introduction to Computing Using Java	3
CSCI1140	Programming Laboratory	1
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	Introduction to Cloud Computing and Storage	3
CSCI4190	Introduction to Social Networks	3
ELEG5491	Introduction to Deep Learning	3
ELTU2014	English for Engineering I	3
ELTU3014	English for Engineering II	2
ENGG1100/ESTR1000	Introduction to Engineering Design	3
ENGG1110/ESTR1002	Problem Solving by Programming	3
ENGG1310/ESTR1003	Engineering Physics: Electromagnetics, Optics and Modern Physics	3
ENGG1410/ESTR1004	Linear Algebra and Vector Calculus for Engineers	3
ENGG1820	Engineering Internship	1
ENGG2310/ESTR2300	Principles of Communication Systems	3
ENGG2430/ESTR2002	Probability and Statistics for Engineers	3
ENGG2460/ESTR2010	Complex Numbers, Differential Equations, and Discrete Mathematics for Engineers	3
ENGG2601	Technology, Society and Engineering Practice	2
ENGG2602	Engineering Practicum	1
ENGG4030/ESTR4300	Web-scale Information Analytics	3
ENGG5301	Information Theory	3

<i>Course Code</i>	<i>Course Title</i>	<i>Unit(s)</i>
ENGG5302	Random Processes	3
ENGG5303	Advanced Wireless Communications	3
ENGG5383	Applied Cryptography	3
ENGG5392	Lightwave System Technologies	3
IERG2051/ESTR2302	Signals and Systems	3
IERG2060	Basic Analog and Digital Circuits	3
IERG3010/ESTR3300	Digital Communications	3
IERG3050	Simulation and Statistical Analysis	3
IERG3060	Microcontrollers and Embedded Systems	3
IERG3080	Information and Software Engineering Practice	3
IERG3280/ESTR3302	Networks: Technology, Economics, and Social Interactions	3
IERG3300/ESTR3304	Introduction to Stochastic Processes	3
IERG3310	Computer Networks	3
IERG3320/ESTR3306	Social Media and Human Information Interaction	3
IERG3800	Information Infrastructure Design Lab	1
IERG3810	Microcontrollers and Embedded System Laboratory	1
IERG3820	Communications Laboratory	1
IERG3830	Product Design Project	3
IERG4020/ESTR4318	Telecommunication Switching and Network Systems	3
IERG4030	Optical Communications	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
IERG4130/ESTR4306	Introduction to Cyber Security	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
IERG4330/ESTR4316	Programming Big Data Systems	3
IERG4831	Networking Laboratory I	2
IERG4841	Networking Laboratory II	2
IERG4998/ESTR4998	Final Year Project I	3
IERG4999/ESTR4999	Final Year Project II	3
IERG5040	Lightwave System Technologies	3
IERG5090	Advanced Networking Protocols and Systems	3
IERG5100	Advanced Wireless Communications	3
IERG5124	Signal Analysis and Application	3
IERG5140	Lightwave Networks	3
IERG5154	Information Theory	3
IERG5200	Channel Coding and Modulation	3

<i>Course Code</i>	<i>Course Title</i>	<i>Unit(s)</i>
IERG5240	Applied Cryptography	3
IERG5270	Advanced Topics in P2P Networks and Systems	3
IERG5280	Mobile Networking	3
IERG5290	Network Coding Theory	3
IERG5300	Random Processes	3
IERG5310	Security and Privacy in Cyber Systems	3
IERG5320	Digital Forensics	3
IERG5330	Network Economics	3
LSCI1001	Basic Concepts in Biological Sciences	3
LSCI1003	Life Sciences for Engineers	3
MATH1020	General Mathematics	3
MATH1510	Calculus for Engineers	3
PHYS1003	General Physics for Engineers	3
PHYS1110	Engineering Physics: Mechanics and Thermodynamics	3
UGFH1000/ UGFN1000	University General Education Foundation Course	3

*Last update: August 2016*

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CSCI2100/ESTR2102	Data Structures	3
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CSCI3160/ESTR3104	Design and Analysis of Algorithms	3
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ENGG2602	Engineering Practicum	1
ENGG4030/ESTR4300	Web-scale Information Analytics	3
ENGG5301	Information Theory	3
ENGG5302	Random Processes	3
ENGG5303	Advanced Wireless Communications	3
ENGG5383	Applied Cryptography	3
ENGG5392	Lightwave System Technologies	3
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IERG2060	Basic Analog and Digital Circuits	3
IERG3010/ESTR3300	Digital Communications	3
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IERG3060	Microcontrollers and Embedded Systems	3
IERG3080	Information and Software Engineering Practice	3
IERG3280/ESTR3302	Networks: Technology, Economics, and Social Interactions	3
IERG3300/ESTR3304	Introduction to Stochastic Processes	3
IERG3310	Computer Networks	3
IERG3320/ESTR3306	Social Media and Human Information Interaction	3
IERG3800	Information Infrastructure Design Lab	1
IERG3810	Microcontrollers and Embedded System Laboratory	1
IERG3820	Communications Laboratory	1
IERG3830	Product Design Project	3
IERG4020/ESTR4318	Telecommunication Switching and Network Systems	3
IERG4030	Optical Communications	3

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IERG4090/ESTR4302	Networking Protocols and Systems	3
IERG4100/ESTR4304	Wireless Communication Systems	3
IERG4110/ESTR4314	Hands-on Wireless Communication	3
IERG4130/ESTR4306	Introduction to Cyber Security	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
IERG4330/ESTR4316	Programming Big Data Systems	3
IERG4831	Networking Laboratory I	2
IERG4841	Networking Laboratory II	2
IERG4998/ESTR4998	Final Year Project I	3
IERG4999/ESTR4999	Final Year Project II	3
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IERG5154	Information Theory	3
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IERG5240	Applied Cryptography	3
IERG5270	Advanced Topics in P2P Networks and Systems	3
IERG5280	Mobile Networking	3
IERG5290	Network Coding Theory	3
IERG5300	Random Processes	3
IERG5310	Security and Privacy in Cyber Systems	3
IERG5320	Digital Forensics	3
IERG5330	Network Economics	3
LSCII001	Basic Concepts in Biological Sciences	3
LSCII003	Life Sciences for Engineers	3
MATH1020	General Mathematics	3
MATH1510	Calculus for Engineers	3
PHYS1003	General Physics for Engineers	3
PHYS1110	Engineering Physics: Mechanics and Thermodynamics	3
UGFH1000/ UGFN1000	University General Education Foundation Course	3