

THE CHINESE UNIVERSITY OF HONG KONG
Department of Information Engineering

I. Suggested Study Plan for MIEG (entrants via ENGG Faculty in 2018)

University Core Requirements

English	9
Chinese	6
Foundation GE	6
University GE	9
College GE	6
PE	2
IT	1 (exempted for course but not unit)

39

Major Requirements

Faculty Package	9
Foundation Science	9
Foundation Math	12 (MATH1050, MATH1510, ENGG1410, ENGG2430)
IE Required	24
MATH Required	15 (MATH2010/2020/2040/2050/2230)
Major Electives	12
Major FYP	6

87

126 (Minimum Unit Requirement for Graduation)

	Recommended Course Pattern	Units
First Year of Attendance	<u>1st term</u>	
	Faculty Package: ENGG1100/ESTR1000 or ENGG1110/ESTR1002 Language: CHLT1100 Major Required: MATH1510 PHYS1003/1110 Physical Education: 1 course College General Education: 1 course	3 3 3 3 1 3
		16
	<u>2nd term</u>	
	Faculty Package: ENGG1100/ESTR1000 or ENGG1110/ESTR1002 ENGG1410/ESTR1004 Language: ELTU1001 Major Required: Any one from CHEM1380/CSCI1120/1130/ENGG1310/ ESTR1003/1100/1102/LSCI1001/1003 Physical Education: 1 course General Education: UGFH/UGFN (1 course)	3 3 4 3 1 3
		17

Second Year of Attendance	1st term Language: CHLT1200 Major Required: ENGG2440/ESTR2004 IERG1810 IERG2060/ESTR2304 IERG2080/ESTR2306 MATH1050 MATH2010	3 3 1 3 2 3 3
		18
	2nd term Language: ELTU2014 Major Required: CSCI2100/ESTR2102 ENGG2430/ESTR2002 IERG2051/ESTR2302 IERG2602 MATH2020 General Education: UGFH/UGFN (1 course) †	3 3 3 3 1 3 3
		19
Third Year of Attendance	1st term Major Required: IERG3080/ESTR3308 IERG3310/ESTR3310 IERG3800 MATH2050 MATH2230	3 3 1 3 3
		13
	2nd term Language: ELTU3014 Major Required: ENGG2310/ESTR2300 IERG3820 MATH2040 Major Elective(s): 2 courses General Education: UGE (1 course)	2 3 1 3 6 3
		18
Fourth Year of Attendance	1st term Major Required: CSCI3160/ESTR3104 IERG4998/ESTR4998 Major Elective: 1 course General Education: UGE (1 course) College General Education: 1 course	3 3 3 3 3
		15
	2nd term Major Required: IERG4999/ESTR4999 General Education: UGE (1 course) Major Elective: 1 course	3 3 3
		9
Total (including Faculty Package):		39(U)+87(M) =126

† Students with CGPA above 3.3 are advised to take ENGG2310/ESTR2300 and IERG3820 in this term in lieu of the General Education class. The General Education class can be taken in Term 5 or Term 6.

II. Suggested Study Plan for MIEG (entrants via SCIENCE Faculty in 2018)

University Core Requirements

English	9
Chinese	6
Foundation GE	6
University GE	9
College GE	6
PE	2
IT	1 (exempted for course but not unit)

39

Major Requirements

Faculty Package	9
Foundation Science	9
Foundation Math	12 (MATH1050, MATH1510, ENGG1410, ENGG2430)
IE Required	24
MATH Required	15 (MATH2010/2020/2040/2050/2230)
Major Electives	12
Major FYP	6

87

126 (Minimum Unit Requirement for Graduation)

	Recommended Course Pattern	Units
First Year of Attendance	1st term	
	Faculty Package: STAT1011 MATH1010 ENGG1410/ESTR1004 (or MATH1030) Language: CHLT1100 Physical Education: 1 course College General Education: 1 course	3 3 3 3 1 3
	16	
	2nd term	
	Faculty Package: A course from Science Faculty Package Group A, B or D Language: ELTU1001 Major Required: MATH1050 Physical Education: 1 course General Education: UGFH/UGFN (1 course)	3 4 3 1 3
	14	

Second Year of Attendance	<u>1st term</u>	
	Language: CHLT1200	3
	Major Required: ENGG1100/ESTR1000 or ENGG1110/ESTR1002	3
	ENGG2440/ESTR2004	3
	IERG1810	1
	IERG2060/ESTR2304	3
	IERG2080/ESTR2306	2
	MATH2010	3
		18
	<u>2nd term</u>	
	Language: ELTU2014	3
	Major Required: CSCI2100/ESTR2102	3
	ENGG1100/ESTR1000 or ENGG1110/ESTR1002	3
	ENGG2430/ESTR2002	3
	IERG2051/ESTR2302	3
	IERG2602	1
	MATH2020	3
		19
	<u>Summer Term</u>	
	General Education: UGFH/UGFN (1 course)	3
		3
Third Year of Attendance	<u>1st term</u>	
	Major Required: IERG3080/ESTR3308	3
	IERG3310/ESTR3310	3
	IERG3800	1
	MATH2050	3
	MATH2230	3
		13
	<u>2nd term</u>	
	Language: ELTU3014	2
	Major Required: ENGG2310/ESTR2300	3
	IERG3820	1
	MATH2040	3
	Major Elective(s): 2 courses	6
	General Education: UGE (1 course)	3
		18
Fourth Year of Attendance	<u>1st term</u>	
	Major Required: CSCI3160/ESTR3104	3
	IERG4998/ESTR4998	3
	Major Elective: 1 course	3
	General Education: UGE (1 course)	3
	College General Education: 1 course	3
		15
	<u>2nd term</u>	
	Major Required: IERG4999/ESTR4999	3
	General Education: UGE (1 course)	3
	Major Elective: 1 course	3
		9
Total (including Faculty Package):		39(U)+87(M) =126

Course List

<i>Course Code</i>	<i>Course Title</i>	<i>Unit(s)</i>
CHEM1380	Basic Chemistry for Engineers	3
CSCII120/ESTR1100	Introduction to Computing Using C++	3
CSCII130/ESTR1102	Introduction to Computing Using Java	3
CSCI2100/ESTR2102	Data Structures	3
CSCI3130	Formal Languages and Automata Theory	3
CSCI3150/ESTR3102	Introduction to Operating Systems	3
CSCI3160/ESTR3104	Design and Analysis of Algorithms	3
CSCI3230	Fundamentals of Artificial Intelligence	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
ENGG2440/ESTR2004	Discrete Mathematics 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
ENGG5301	Information Theory	3
ENGG5302	Random Processes	3
ENGG5303	Advanced Wireless Communications	3
ENGG5383	Applied Cryptography	3
ENGG5392	Lightwave System Technologies	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	2
IERG2602	Engineering Practicum	1
IERG3010/ESTR3300	Digital Communications	3
IERG3050	Simulation and Statistical Analysis	3
IERG3060	Microcontrollers and Embedded Systems	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
IERG3800	Information Infrastructure Design Lab	1
IERG3810	Microcontrollers and Embedded System Laboratory	1
IERG3820	Communications Laboratory	1
IERG3830	Product Design and Development	3
IERG4004	E-payment Systems and Cryptocurrency Technologies	3

<i>Course Code</i>	<i>Course Title</i>	<i>Unit(s)</i>
IERG4030/ESTR4320	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
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
IERG4300/ESTR4306	Web-scale Information Analytics	3
IERG4330/ESTR4316	Programming Big Data Systems	3
IERG4340	Emerging Technologies in Information Engineering	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
IERG5020	Telecommunication Switching and Network Systems	3
IERG5040	Lightwave System Technologies	3
IERG5090	Advanced Networking Protocols and Systems	3
IERG5100	Advanced Wireless Communications	3
IERG5124	Signal Analysis and Application	3
IERG5130	Probabilistic Models and Inference Algorithms for Machine Learning	3
IERG5140	Lightwave Networks	3
IERG5154	Information Theory	3
IERG5200	Channel Coding and Modulation	3
IERG5230	Algorithms and Realization of Internet of Things Systems	3
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
IERG5340	IT Innovation and Entrepreneurship	3
IERG5590	Advanced Topics in Blockchain	3
LSCI1001	Basic Concepts in Biological Sciences	3
LSCI1003	Life Sciences for Engineers	3
MATH1010	University Mathematics	3
MATH1020	General Mathematics	3
MATH1030	Linear Algebra I	3
MATH1050	Foundation of Modern Mathematics	3
MATH1510	Calculus for Engineers	3
MATH2010	Advanced Calculus I	3
MATH2020	Advanced Calculus II	3
MATH2040	Linear Algebra II	3
MATH2050	Mathematical Analysis I	3
MATH2060	Mathematical Analysis II	3
MATH2070	Algebraic Structures	3

<i>Course Code</i>	<i>Course Title</i>	<i>Unit(s)</i>
MATH2230	Complex Variables with Applications	3
MATH3010	Higher Geometry	3
MATH3030	Abstract Algebra	3
MATH3040	Fields and Galois Theory	3
MATH3070	Introduction to Topology	3
MATH3080	Number Theory	3
MATH3093	Fourier Analysis	3
MATH3215	Operations Research	3
MATH3230	Numerical Analysis	3
MATH3250	Discrete Mathematics	3
MATH3260	Graph Theory	3
MATH3270	Ordinary Differential Equations	3
MATH3290	Mathematical Modeling	3
MATH3310	Computational and Applied Math	3
MATH3320	Foundation of Data Analytics	3
MATH3330	Big Data Computing	3
MATH3360	Mathematical Imaging	3
MATH4010	Functional Analysis	3
MATH4020	Calculus of Variations	3
MATH4030	Differential Geometry	3
MATH4230	Optimization Theory	3
MATH4240	Stochastic Processes	3
MATH4260	Coding Theory and Cryptography	3
MATH4280	Data Analytics in Design and Innovation	3
PHYS1003	General Physics for Engineers	3
PHYS1110	Engineering Physics: Mechanics and Thermodynamics	3
UGFH1000/ UGFN1000	University General Education Foundation Course	3

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