Program Information

Academic Program: B.Sc. in Computer Science
Academic Year: 2011

Select Language: English

Study Scheme Learning Outcomes

Study Scheme

Computer Science
Applicable to students admitted in 2011-12

1. Major Programme

S6/S7 students

Students are required to complete a minimum of 71 units of Major courses as follows (Note):

(i) Required Courses: 53 units
CSCI1130, 1140, 2100, 2110, 2800, 3100, 3130, 3150, 3160, 3170, 3180, 3250, 3420, 4010, 4020, ENGG2020, 2040, MATH2510

(ii) Elective Courses: 18 units
CSCI1020, 1040, 1050, 3120, 3210, 3220, 3230, 3260, 3270, 3280, 3290, 3310, 3320, 4120, 4130, 4140, 4160, 4170, 4180, 4190, 4210, 4220, 4260, 4430, 5010, 5020, 5030, 5040, 5050, 5060, 5070, 5080, 5110, 5120, 5150, 5160, 5170, 5180, 5210, 5230, 5240, 5250, 5280, 5310, 5320, 5330, 5340, 5350, 5360, 5370, 5390, 5420, 5430, 5440, 5450, 5460, 5470, CENG2010, 3430, 3470, 3490, 4100, 4480, 5010, 5020, 5030, 5050, 5270, 5271, 5272, 5420, 5430, IERG3050#, 4180#, SEEM3420#, 3430#, 3490#, any one course from (DSME3020, 4070, 4150, 4210, 4250, MKTG4080)

Total: 71 units

Recommended course pattern

Term 1	Units	Term 2	Units	Term 3	Units
CSCI1130	3	CSCI1140	1	CSCI3130	3
CSCI2110	3	CSCI2100	3	CSCI3150	3
ENGG2020	3	CSCI2800	3	CSCI3160	3
MATH2510	3	ENGG2040	3	CSCI3180	3
	12		10		12
Term 4	**Units**	**Term 5**	**Units**	**Term 6**	**Units**
CSCI3100	3	CSCI3250	2	CSCI4020	4
CSCI3170	3	CSCI4010	4	Electives	9
CSCI3420	3	Electives	9		
	9		15		13

Note: Major courses at 3000 and above level will be included in the calculation of the Major GPA for honours classification. Courses with "#" and ENGG3910, 3920 are to be included in the Major GPA as well.

Students with associate degrees

Students are required to complete a minimum of 59 units of Major courses as follows (Note):

(i) Required Courses: 40 units
CSCI2100, 2110, 3100, 3130, 3150, 3160, 3170, 3180, 3250, 3420, 4010, 4020, ENGG2040

(ii) Elective Courses: 19 units
CSCI1020, 1040, 1050, 3120, 3210, 3220, 3230, 3260, 3270, 3280, 3290, 3310, 3320, 4120, 4130, 4140, 4160, 4170, 4180, 4190, 4210, 4220, 4260, 4430, 5010, 5020, 5030, 5040, 5050, 5060, 5070, 5080, 5110, 5120, 5150, 5160, 5170, 5180, 5210, 5230, 5240, 5250, 5280, 5310, 5320, 5330, 5340, 5350, 5360, 5370, 5390, 5420, 5430, 5440, 5450, 5460, 5470, CENG2010, 3430, 3470, 3490, 4100, 4480, 5010, 5020, 5030, 5050, 5270, 5271, 5272, 5420, 5430, IERG3050#, 4180#, SEEM3420#, 3430#, 3490#, any one course from (DSME3020, 4070, 4150, 4210, 4250, MKTG4080)

Total: 59 units

Recommended course pattern

Term 1	Units	Term 2	Units
CSCI2100	3	CSCI3100	3
CSCI2110	3	CSCI3180	3
CSCI3150	3	CSCI3420	3
CSCI3170	3	ENGG2040	3
		Major Elective	3
	12		15
Term 3	**Units**	**Term 4**	**Units**
CSCI3130	3	CSCI4020	4
CSCI3160	3	Major Electives	12
CSCI3250	2		
CSCI4010	4		
Major Electives	4		
	16		16

Students with higher diplomas

Students are required to complete a minimum of 59 units of Major courses as follows (Note):

Students are required to complete a minimum of 59 units of Major courses as follows (Note):

(i) Required Courses: 40 units
CSCI2100, 2110, 3100, 3130, 3150, 3160, 3170, 3180, 3250, 3420, 4010, 4020, ENGG2040

(ii) Elective Courses: 19 units
CSCI1020, 1040, 1050, 3120, 3210, 3220, 3230, 3260, 3270, 3280, 3290, 3310, 3320, 4120, 4130, 4140, 4160, 4170, 4180, 4190, 4210, 4220, 4260, 4430, 5010, 5020, 5030, 5040, 5050, 5060, 5070, 5080, 5110, 5120, 5150, 5160, 5170, 5180, 5210, 5230, 5240, 5250, 5280, 5310, 5320, 5330, 5340, 5350, 5360, 5370, 5390, 5420, 5430, 5440, 5450, 5460, 5470, CENG2010, 3430, 3470, 3490, 4100, 4480, 5010, 5020, 5030, 5050, 5270, 5271, 5272, 5420, 5430, IERG3050#, 4180#, SEEM3420#, 3430#, 3490#, any one course from (DSME3020, 4070, 4150, 4210, 4250, MKTG4080)

Total: 59 units

Recommended course pattern

Term 1	Units	Term 2	Units
Language	3	CSCI3100	3
CSCI2100	3	CSCI3180	3
CSCI2110	3	CSCI3420	3
CSCI3150	3	ENGG2040	3
CSCI3170	3	Major Elective	3
	15		15
Term 3	**Units**	**Term 4**	**Units**
CSCI3130	3	CSCI4020	4
CSCI3160	3	Major Electives	12
CSCI3250	2		
CSCI4010	4		
Major Electives	4		
	16		16

Notes:
1. Applicable to students with associate degrees/higher diplomas
Major courses at 3000 and above level will be included in the calculation of the Major GPA for honours classification. Courses with "#" and ENGG3910, 3920 are to be included in the Major GPA as well.
2. Students with higher diplomas are required to fulfil the Faculty Language Requirement, in addition to other requirements stipulated by the University. Please refer to the Faculty Language Requirement of the Faculty of Engineering for details.

2. Minor Programme

Students are required to complete a minimum of 18 units as follows:

(i) Required Courses: 12 units
CSCI1510 (or 1520 or 1530), 2510, 2520 and 3530

(ii) Elective Courses: 6 units
CSCI1010, 1020, 1030, 1040, 1050, 2120, 2720, 3170, 3180, 3190, 3220, 3230, 3250, 3260, 3280, 3310, 3420, 4120, 4140, 4180, 4190, CENG3150, 3430

Total: 18 units

Notes:
1. Course and Unit Exemptions (for Minor students only):
Students are allowed to exempt from a maximum of 9 units of courses (except for students who opt out from the IBBA-CENG or IBBA-CSCI double degree options, they have no limit on course and unit exemptions in fulfilling the CSCI Minor Programme). Students who have taken course(s) in Column A will be exempted automatically from taking the corresponding equivalent course(s) in Column B due to similarities in the contents of some courses.

Column A	Column B
CSCI1110/1120/1130	CSCI1510/1520/1530
CENG2400/ELEG3230	CSCI2510
CSCI2100	CSCI2520
CENG3420	CSCI3420
CSCI3100/IERG3080	CSCI3530

2. Other than the course and unit exemptions stated in Note 1 above, courses which Biomedical Engineering, Electronic Engineering, Information Engineering, Mechanical and Automation Engineering, Systems Engineering and Engineering Management Majors have taken to fulfil their Major Programme requirement cannot be used to fulfil the Minor Programme requirement. Students are required to declare which course/s will count towards the requirement of Minor Programme at their final term of attendance.
3 Other than CSCI2520 and one of the courses from CSCI1510 or 1520 or 1530, students cannot use the same course to fulfil the requirements of both Minor in Computer Science and Minor in Web and Cloud Computing.
4. Applicable to Mathematics Majors
Mathematics Majors who have taken MATH2210 and 2220 will be exempted from CSCI1530. They may also choose any one from MATH3230, 3240 and 3260 to replace one of the elective courses.
5. Applicable to Physics Majors
Physics Majors who have taken PHYS2351 will be exempted from CSCI1530. They may also choose both PHYS3350 plus 4370 to replace one of the elective courses.

3. Double-Degree Option

Computer Science and Integrated BBA

S7 students

1. Requirements for B.Sc. Degree in Computer Science (the First Degree)

Students are required to complete a minimum of 71 units of Major courses as follows:

(i) Required Courses: 53 units
CSCI1130, 1140, 2100, 2110, 2800, 3100, 3130, 3150, 3160, 3170, 3180, 3250, 3420, 4010, 4020, ENGG2020, 2040, MATH2510

(ii) Electives Courses: 18 units

(ii) Electives Courses: 18 units
CSCI1020, 1040, 1050, 3120, 3210, 3220, 3230, 3260, 3270, 3280, 3290, 3310, 3320, 4120, 4130, 4140, 4160, 4170, 4180, 4190, 4210, 4220, 4260, 4430, 5010, 5020, 5030, 5040, 5050, 5060, 5070, 5080, 5110, 5120, 5150, 5160, 5170, 5180, 5210, 5230, 5240, 5250, 5280, 5310, 5320, 5330, 5340, 5350, 5360, 5370, 5390, 5420, 5430, 5440, 5450, 5460, 5470, CENG2010, 3430, 3470, 3490, 4100, 4480, 5010, 5020, 5030, 5050, 5270, 5271, 5272, 5420, 5430, IERG3050, 4180, SEEM3420, 3430, 3490, any one course from (DSME3020, 4070, 4150, 4210, 4250, MKTG4080)

Total: 71 units

2. Requirements for BBA Degree in IBBA Programme (the Second Degree)

Students are required to complete a minimum of 63 units. For the detailed requirements, students should refer to the latest version of the study scheme of the IBBA programme applicable to their year of entry listed in the Student Handbook (http://rgsntl.rgs.cuhk.edu.hk/aqs_prd_applx/).

Summary* (for S7 Entrants)

Description	Units
General Education	12
Physical Education	2
Engineering Faculty Language Requirement	3-9
CSCI Major Courses	71
BA Faculty Language Requirement	3-9
IBBA Major Courses	63
TOTAL	154-166

Remarks:

1. Students exempted from the Chinese language requirement for admission may be required to complete additional Chinese language courses. Please refer to the language requirements of both faculties for details.
2. DSME2050 (4 units) and its associated units can be exempted in fulfilling the requirement of the second degree by successfully completing SEEM3490.
3. One of the courses from DSME3020 or 4070 or 4150 or 4210 or 4250 or MKTG4080 and its associated units can be used to satisfy both the requirements of the first and second degrees, so the total unit requirement will be reduced by 3 units.
4. The Major GPA calculation for honours classifications of the first degree follows the same calculation of the Computer Science Programme.
5. Students of the double-degree programme opting to graduate with the first degree alone will have to complete all the necessary requirements for the first degree.

Recommended Study Pattern* (for S7 Entrants)

Term 1	Units	Term 2	Units
General Education	3	General Education	3
Physical Education	1	Physical Education	1
CSCI1130	3	CSCI1140	1
CSCI2110	3	CSCI2100	3
ENGG2020	3	CSCI2800	3
MATH2510	3	ENGG2040	3
IBBA Major Course	3	IBBA Major Course	3
	19		17
Summer Term	**Units**		
IBBA Major Course	3		
	3		
Term 3	**Units**	**Term 4**	**Units**
General Education	3	General Education	3
CSCI3130	3	CSCI3100	3
CSCI3150	3	CSCI3170	3
CSCI3160	3	CSCI3420	3
CSCI3180	3	IBBA Major Course	3
IBBA Major Course	3		
	18		15
Summer Term	**Units**		
IBBA Major Courses	6		
	6		
Term 5	**Units**	**Term 6**	**Units**
CSCI3250	2	CSCI4020	4
CSCI4010	4	CSCI Major Electives	12
CSCI Major Electives	6	IBBA Major Course	3
IBBA Major Courses	6		
	18		19
Term 7	**Units**	**Term 8**	**Units**
IBBA Major Courses	16	IBBA Major Courses	17
	16		17

* Language courses are not included in the summary and recommended study pattern. Please refer to Faculty Language Requirements of the Engineering and Business Administration for details.

S6 students

1. Requirements for B.Sc. Degree in Computer Science (the First Degree)

Students are required to complete a minimum of 71 units of Major courses as follows:

(i) Required Courses: 53 units
CSCI1130, 1140, 2100, 2110, 2800, 3100, 3130, 3150, 3160, 3170, 3180, 3250, 3420, 4010, 4020, ENGG2020, 2040, MATH2510

(ii) Electives Courses: 18 units

(ii) Elective Courses: 18 units
CSCI1020, 1040, 1050, 3120, 3210, 3220, 3230, 3260, 3270, 3280, 3290, 3310, 3320, 4120, 4130, 4140, 4160, 4170, 4180, 4190, 4210, 4220, 4260, 4430, 5010, 5020, 5030, 5040, 5050, 5060, 5070, 5080, 5110, 5120, 5150, 5160, 5170, 5180, 5210, 5230, 5240, 5250, 5280, 5310, 5320, 5330, 5340, 5350, 5360, 5370, 5390, 5420, 5430, 5440, 5450, 5460, 5470, CENG2010, 3430, 3470, 3490, 4100, 4480, 5010, 5020, 5030, 5050, 5270, 5271, 5272, 5420, 5430, IERG3050, 4180, SEEM3420, 3430, 3490, any one course from (DSME3020, 4070, 4150, 4210, 4250, MKTG4080)

Total: 71 units

2. Requirements for BBA Degree in IBBA Programme (the Second Degree)

Students are required to complete a minimum of 63 units. For the detailed requirements, students should refer to the latest version of the study scheme of the IBBA programme applicable to their year of entry listed in the Student Handbook (http://rgsntl.rgs.cuhk.edu.hk/aqs_prd_applx/).

Summary* (for S6 Entrants)

Description	Units
General Education	18
Physical Education	2
Engineering Major / Faculty Requirement (Foundation Courses)	9
Engineering Faculty Language Requirement	9-10 (English)
	3-12 (Chinese)
CSCI Major Courses	71
BA Faculty Language Requirement	0-9
IBBA Major Courses	63
TOTAL	175-194

Remarks:

1. S6 entrants admitted into the double degree programmes are required to fulfil the S6 Faculty Language Requirements of the Engineering Faculty and the S7 Faculty Language Requirements of the BA Faculty. Please refer to the language requirements of both faculties for details.
2. DSME2050 (4 units) and its associated units can be exempted by successfully completing SEEM3490.
3. One of the courses from DSME3020 or 4070 or 4150 or 4210 or 4250 or MKTG4080 and its associated units can be used to satisfy both the requirements of the first and second degrees, so the total unit requirement will be reduced by 3 units.
4. The Major GPA calculation for honours classifications of the first degree follows the same calculation of the Computer Science Programme.
5. Students of the double-degree programme opting to graduate with the first degree alone will have to complete all the necessary requirements for the first degree.

Recommended Study Pattern (for S6 Entrants) *#

Term 1	Units	Term 2	Units
General Education	3	General Education	3
Physical Education	1	Physical Education	1
CSCI1130	3	PHYS1001	3
CSCI2110	3	ENGG1010	3
MATH1510	3	CSCI1140	1
IBBA Major Course	3	CSCI2100	3
		IBBA Major Course	3
		ENGG2040	3
	16		20
Summer Term	**Units**		
IBBA Major Course	3		
ELTU1111	3		
	6		
Term 3	**Units**	**Term 4**	**Units**
ELTU2452	3	General Education	3
CSCI3130	3	CHLT Elective Course for	3
CSCI3160	3	Engineering S6 Entrants	
ENGG2020	3	CSCI3100	3
MATH2510	3	CSCI2800	3
IBBA Major Courses	6	IBBA Major Courses	6
	21		18
Summer Term	**Units**		
IBBA Major Courses	6		
	6		
Term 5	**Units**	**Term 6**	**Units**
General Education	6	General Education	3
CSCI3150	3	ELTU Elective Course for	3
CSCI3180	3	Engineering S6 Entrants	
CSCI Major Elective	3	CSCI3170	3
IBBA Major Courses	6	CSCI Major Elective	6
		IBBA Major Courses	6
	21		21
Summer Term	**Units**		
IBBA Major Courses	6		
	6		
Term 7	**Units**	**Term 8**	**Units**
CSCI3250	2	CSCI3420	3
CSCI4010	4	CSCI4020	4
CSCI Major Elective	3	CSCI Major Elective	6

CSCI Major Elective	3	CSCI Major Elective	6
IBBA Major Courses	10	IBBA Major Courses	8
	19		21

* Some S6 entrants may be required to complete a number of additional Chinese language courses. These additional courses are not included in the summary and recommended study pattern. Please refer to Faculty Language Requirements of the Engineering and Business Administration Faculties for details.

\# Students are encouraged to enroll in the summer term after Term 2 to reduce their workload in regular terms.

Course List

Course Code	*Course Title*	*Unit*
CSCI1010	Hands-on Introduction to C	1
CSCI1020	Hands-on Introduction to C++	1
CSCI1030	Hands-on Introduction to Java	1
CSCI1040	Hands-on Introduction to Python	1
CSCI1050	Hands-on Introduction to Matlab	1
CSCI1110	Introduction to Computing Using C	3
CSCI1120	Introduction to Computing Using C++	3
CSCI1130	Introduction to Computing Using Java	3
CSCI1140	Programming Laboratory	1
CSCI1510	Computer Principles and C Programming	3
CSCI1520	Computer Principles and C++ Programming	3
CSCI1530	Computer Principles and Java Programming	3
CSCI1540	Fundamental Computing With C++	3
CSCI1580	Visual Programming	3
CSCI2100	Data Structures	3
CSCI2110	Discrete Mathematics	3
CSCI2120	Introduction to Software Engineering	2
CSCI2510	Computer Organization	3
CSCI2520	Data Structures and Applications	3
CSCI2720	Building Web Applications	3
CSCI2800	Numerical Computation	3
CSCI3100	Software Engineering	3
CSCI3120	Compiler Construction	3
CSCI3130	Formal Languages and Automata Theory	3
CSCI3150	Introduction to Operating Systems	3
CSCI3160	Design and Analysis of Algorithms	3
CSCI3170	Introduction to Database Systems	3
CSCI3180	Principles of Programming Languages	3
CSCI3190	Introduction to Discrete Mathematics and Algorithms	3
CSCI3210	Principles of Multiagent Systems	3
CSCI3220	Algorithms for Bioinformatics	3
CSCI3230	Fundamentals of Artificial Intelligence	3
CSCI3250	Computers and Society	2
CSCI3260	Principles of Computer Graphics	3
CSCI3270	Advanced Programming Laboratory	2
CSCI3280	Introduction to Multimedia Systems	3
CSCI3290	Computational Photography	3
CSCI3310	Mobile Computing and Applications Development	3
CSCI3320	Fundamentals of Machine Learning	3
CSCI3420	Computer System Architectures	3
CSCI3530	Software Technology	3
CSCI4010	Final Project I	4
CSCI4020	Final Project II	4
CSCI4120	Principles of Computer Game Software	3
CSCI4130	Introduction to System Administration Laboratory	1
CSCI4140	Open-source Software Project Development	3
CSCI4160	Distributed and Parallel Computing	3
CSCI4170	Web Intelligence & Social Computing	3
CSCI4180	Introduction to Cloud Computing	3
CSCI4190	Introduction to Social Networks	3
CSCI4210	Reverse Software Engineering	3
CSCI4220	Introduction to Game Theory in Computer Science	3
CSCI4260	Current Topics in Computing Techniques	3
CSCI4430	Data Communication and Computer Networks	3
CSCI5010	Practical Computational Geometry Algorithms	3
CSCI5020	External Data Structures	3
CSCI5030	Machine Learning Theory	3
CSCI5040	Combinatorics Computing	3
CSCI5050	Topics in Bioinformatics and Computational Biology	3
CSCI5060	Techniques in Theoretical Computer Science	3
CSCI5070	Advanced topics in Social Computing	3
CSCI5080	Advanced System Security	3
CSCI5110	Advanced Topics in Software Engineering	3

CSCI5120	Advanced Topics in Database Systems	3
CSCI5150	Learning Theory and Computational Finance	3
CSCI5160	Topics in Algorithms	3
CSCI5170	Theory of Computation Complexity	3
CSCI5180	Techniques for Data Mining	3
CSCI5210	Advanced Topics in Computer Graphics and Visualization	3
CSCI5230	Advanced Topics in Compiler Construction	3
CSCI5240	Combinatorial Search and Optimization with Constraints	3
CSCI5250	Information Retrieval & Search Engines	3
CSCI5280	Image Processing & Computer Vision	3
CSCI5310	Topics in Biometrics	3
CSCI5320	Topics in Graph Algorithms	3
CSCI5330	Advanced Algorithms for Bioinformatics	3
CSCI5340	Advanced Topics in Distributed Software Systems	3
CSCI5350	Game Theory in Computer Science	3
CSCI5360	Grid Computing	3
CSCI5370	Quantum Computing	3
CSCI5390	Advanced Topics in GPU Programming	3
CSCI5420	Computer System Performance Evaluation	3
CSCI5430	Autonomous Agents & Multiagent Systems	3
CSCI5440	Theory of Cryptography	3
CSCI5450	Randomness and Computation	3
CSCI5460	Virtual Reality	3
CSCI5470	Computer and Network Security	3

Study Scheme Learning Outcomes

Learning Outcomes

Only applicable to the new 4-year curriculum

Course Information

Return to Search