

**Catalogue Term 2016-17 & 2017-18**  
**BSCU4, BSCU3 and BSCU2 Cohort 2016 & 2017**  
**Course List with Prerequisite(s) and Precursor(s)**

**Common Requirement**

**1. Gateway Education Requirement**

<b>Course Code</b>	<b>Course Name</b>	<b>Unit</b>	<b>Prerequisite(s)</b>	<b>Precursor(s)</b>
<b><u>University requirements</u></b>				
GE1401	University English	3	Grade D in HKAL Use of English or Grade 4 in HKDSE or Successful completion of English for Academic Purposes (EL0200A & EL0200B) or Grade B or above in their overall course results for EL0200A	Nil
GE2410	English for Engineering	3	Grade D in HKAL Use of English or Grade 4 in HKDSE or Successful completion of English for Academic Purposes (EL0200A & EL0200B) or Grade B or above in their overall course results for EL0200A	Nil
GE1501	Chinese Civilisation - History and Philosophy	3	Nil	Nil
<b><u>College/School-specified courses</u></b>				
<b>For Normative 4-year Degree (BSCU4)</b>				
<b>Mathematics (6 credit units)</b>				
MA1200 / I /	Calculus and Basic Linear Algebra I /	3	(i) HKDSE Mathematics Compulsory Part, or (ii) HKDSE Mathematics Compulsory Part and Extended Part Module 1, or (iii) HKDSE Mathematics Compulsory Part and Extended Part Module 2 (Levels 1 – 3); or equivalent Notes to Students: Students with HKDSE Mathematics Extended Part Module 2 (Levels 4 –5) are required to take MA1300 instead.	Nil
MA1300	Enhanced Calculus and Linear Algebra I	3	(i) HKDSE Mathematics Compulsory Part and Extended Part Module 1 (Level 5), or (ii) HKDSE Mathematics Compulsory Part and Extended Part Module 2 (Levels 3 – 5); or equivalent	Nil
MA1201 / II /	Calculus and Basic Linear Algebra II /	3	(i) MA1200 Calculus and Basic Linear Algebra I, or (ii) Grade B or above in MA1100 Foundation Mathematics I (approval from MA must be obtained), or (iii) MA1300 Enhanced Calculus and Linear Algebra I (approval from MA must be obtained)	Nil
MA1301	Enhanced Calculus and Linear Algebra II	3	(i) MA1300 or (ii) Grade B or above in MA1200 (approval from MA must be obtained)	Nil

<b>Computing (3 credit units)</b>				
<b>Course Code</b>	<b>Course Name</b>	<b>Unit</b>	<b>Prerequisite(s)</b>	<b>Precursor(s)</b>
CS1102 /	Introduction to Computer Studies /	3	Nil	Nil
CS1302	Introduction to Computer Programming	3	Level 2 or above in HKDSE Information & Communication Technology with Software Development elective or Pass in a placement test administered by CS Department	Nil
<b>Advanced Standing I (BSCU3) and Advanced Standing II (Senior-year Entry: BSCU2)</b>				
GE2326	Probability in Action: From the Unfinished Game to the Modern World	3	Nil	Nil
Choose any ONE from the following list:				
GE2313	Global IT Case Studies	3	Nil	Nil
GE2315	Security and Privacy in the Information Age	3	Nil	Nil
GE2323	Mobile Social Networks: Practices, Challenges, and Beyond	3	Nil	Nil
GE2324	The Art and Science of Data	3	Nil	Nil
GE2338	Internet Applications and Security	3	Nil	Nil
GE2340	Artificial Intelligence – Past, Present, and Future	3	Nil	Nil
CB2100	Introduction to Financial Accounting	3	Nil	Nil
CB2300	Management	3	Nil	Nil
CB2500	Information Management	3	Nil	Nil
CB2601	Marketing	3	Nil	Nil

## 2. College/School Requirement, if any

<b>Course Code</b>	<b>Course Name</b>	<b>Unit</b>	<b>Prerequisite(s)</b>	<b>Precursor(s)</b>
<b>Normative 4-year Degree (BSCU4) (6 credit units)</b>				
Science: Choose <i>two</i> from the following three subject areas:				
<i>Physics</i>				
AP1201	General Physics I	3	HKDSE Mathematics Compulsory Part or equivalent	HKDSE Physics or Combined Science (Physics, Chemistry) or Combined Science (Biology, Physics) or AP1200 Foundation Physics
<i>Chemistry</i>				
BCH1100	Chemistry	3	Nil	Nil

<i>Biology</i>				
BCH1200	Discovery in Biology	3	Nil	Nil

### 3. English Language Requirement

*Students scoring below Level 4 in HKDSE English Language or Grade D in HKALE AS-level Use of English or students who do not possess an equivalent qualification are required to complete two 3-credit unit courses, EL0200A English for Academic Purposes 1 and EL0200B English for Academic Purposes 2, prior to taking the GE English courses. Students who demonstrate that they have achieved a grade B or above in their overall course results for EL0200A will achieve 3 credits and also be considered to have satisfied the pre-requisite for entry to the GE English courses without needing to take EL0200B. The credit units of EL0200A and EL0200B will not be counted towards the minimum credit units required for graduation and will not be included in the calculation of the cumulative grade point average (CGPA). However, they will be counted towards the maximum credit units permitted.*

Course Code	Course Name	Unit	Prerequisite(s)	Precursor(s)
EL0200A	English for Academic Purposes 1	3	Nil	Nil
EL0200B	English for Academic Purposes 2	3	EL0200A	Nil

### 4. Chinese Language Requirement

*Students scoring below Level 4 in HKDSE Chinese Language, or below Grade D in HKALE AS-level Chinese Language and Culture will be required to complete a 3-credit unit course CHIN1001 University Chinese I. The 3 credit units will not be counted towards the minimum credit units required for graduation and will not be included in the calculation of the cumulative grade point average (CGPA). However, they will be counted towards the maximum credit units permitted.*

Course Code	Course Name	Unit	Prerequisite(s)	Precursor(s)
CHIN1001	University Chinese I	3	Grade E in HKALE AS Chinese Language and Culture, or Level 3 in HKDSE Chinese	Nil

### **Major Requirement**

*Normative 4-year Degree (BSCU4): 84 credit units*

*Advanced Standing I (BSCU3): 75 credit units*

*Advanced Standing II (BSCU2): 60 credit units*

#### **1. Core Courses (BSCU4: 72 credit units; BSCU3: 63 credit units; BSCU2: 48 credit units)**

15 credit units are waived for students admitted into Advanced Standing II including courses CS2115, CS2204, CS2310, CS3201, SS3904

#### **Required CS Courses (BSCU4 & BSCU3: 55 credit units; BSCU2: 43 credit units)**

Course Code	Course Name	Unit	Prerequisite(s)	Precursor(s)
CS2115	Computer Organization	3	Nil	Nil
CS2204	Fundamentals of Internet Applications Development	3	Nil	Nil

Course Code	Course Name	Unit	Prerequisite(s)	Precursor(s)
CS2310	Computer Programming	3	CS1102 /CS1302	Nil
CS2312	Problem Solving and Programming	3	Nil	CS2310 / CS2311
CS2611	Seminars on Contemporary Technology I	1	Nil	Nil
CS3103	Operating Systems	3	Nil	(CS2115 /EE2004) AND (CS2310/CS2311/ CS2360)
CS3201	Computer Networks	3	Nil	Nil
CS3334	Data Structures	3	CS2310/CS2311 /CS2312	Nil
CS3342	Software Design	3	CS2310/ CS2311 / CS2360	Nil
CS3343	Software Engineering Practice	3	CS2310/CS2311 /CS2312 /CS2360	(CS3342 and CS3402 )
CS3402	Database Systems	3	CS2310/ CS2311 /CS2313 /CS2360	Nil
CS3504	IT Professional Placement	12	Completed at least 25 cus of CS courses and attained CGPA of 1.7 or above in semester prior to placement	Nil
CS4335	Design and Analysis of Algorithms	3	Nil	CS2468 /CS3334 /EE2331
CS4514	Project	9	CS3504 /Approval from Programme Leader if CS3504 has not been completed.	Nil

**Required Supporting Courses (BSCU4: 17 credit units; BSCU3: 8 credit units; BSCU2: 5 credit units)**

Course Code	Course Name	Unit	Prerequisite(s)	Precursor(s)
MA2185	Discrete Mathematics	3	Nil	Nil
EN4262	English Communication Skills for Computing	2	GE1401 and GE2410	Nil
<b>For Normative 4-year Degree (BSCU4) and Advanced Standing I (BSCU3)</b>				
SS3904	Science, Technology and Society for Computing	3	Nil	Nil
<b>For Normative 4-year Degree (BSCU4)</b>				
GE2326	Probability in Action: From the Unfinished Game to the Modern World	3	Nil	Nil
Choose any ONE from the following list:				
GE2313	Global IT Case Studies	3	Nil	Nil
GE2315	Security and Privacy in the Information Age	3	Nil	Nil
GE2323	Mobile Social Networks: Practices, Challenges, and Beyond	3	Nil	Nil

Course Code	Course Name	Unit	Prerequisite(s)	Precursor(s)
GE2324	The Art and Science of Data	3	Nil	Nil
GE2338	Internet Applications and Security	3	Nil	Nil
GE2340	Artificial Intelligence – Past, Present, and Future	3	Nil	Nil
Choose any ONE from the following list:				
CB2100	Introduction to Financial Accounting	3	Nil	Nil
CB2300	Management	3	Nil	Nil
CB2500	Information Management	3	Nil	Nil
CB2601	Marketing	3	Nil	Nil

## 2. Electives: (12 credit units)

<b>Information Security Stream – Stream Core:</b>				
CS4286	Internet Security and E-Commerce Protocols	3	CS3201 /CS3270 / BCH2808	
CS4293	Topics on Cybersecurity	3	(CS2310 /CS2311 /CS2312) & (CS3103) & (CS3201)	
CS4394	Information Security and Management	3	Nil	CS3102 /CS3103 /CS3161
<b>Multimedia Computing Stream – Stream Core:</b>				
CS3483	Multimodal Interface Design	3	CS2310 /CS2311 /CS2313 /CS2360	Nil
CS4182	Computer Graphics	3	CS2303 /CS3334 /EE3206	Nil
<b>Choose one out of the following four courses:</b>				
CS4185	Multimedia Technologies and Applications	3	(CS2310 /CS2311 /CS2313 /CS2331) and (CS2303 / CS3334)	Nil
CS4186	Computer Vision and Image Processing	3	CS2303 /CS3334 /CS4335 /EE2331 /EE3131	Nil
CS4187	Computer Vision for Interactivity	3	CS2303 /CS3334	Nil
CS4188	Virtual Reality	3	CS2303 /CS3334 /EE3206	Nil
<b>Software Engineering and Project Management Stream - Stream Core:</b>				
<b>Choose three out of the following four courses:</b>				
CS3346	Software Testing and Maintenance	3	CS3342 / CS3343	Nil
CS3356	Managing Software Projects	3	CS3342 /CS3354	Nil
CS4348	Software Quality Management	3	CS3342	Nil

Course Code	Course Name	Unit	Prerequisite(s)	Precursor(s)
CS4389	Decentralized Applications Development	3	CS2312 /CS3343	CS2204 /CS3201 /CS3402
<b>Data Science Stream – Stream Core:</b>				
CS3481	Fundamentals of Data Science	3	CS2204	Nil
CS4480	Data-Intensive Computing	3	CS3402	Nil
CS4487	Machine Learning	3	CS3481 /CS4483	Nil
<b>Other Electives:</b>				
CS3185	Computer Architecture	3	CS2115	Nil
CS3283	Distributed Systems	3	Nil	CS3103 and CS3201
CS3382	Web Usability Design and Engineering	3	Nil	(CS2204 /CS1303 /CS3270) and (CS2310 /CS2311 / CS2312 /CS2313 /CS2360)
CS3391	Advanced Programming	3	CS2310 /CS2311	Nil
CS4280	Advanced Internet Applications Development	3	CS2204 or (CS1103 & CS1303 & CS2313)	CS2303 /CS3201 /CS3270
CS4284	Mobile Computing	3	CS3201 or CS3270 or EE3009 or EE3016	Nil
CS4285	High Speed Multimedia Networks	3	CS3201 /EE3009 or (EE3015 and EE2371)	Nil
CS4288	Cryptographic Algorithms and Protocols	3	MA2185	Nil
CS4289	Pervasive Computing	3	CS3201 and CS3103	Nil
CS4295	Mobile Application Programming	3	CS2312/CS2313/CS2332/CS2360) & CS1303/CS2204/CS3201/CS3270	Nil
CS4296	Cloud Computing	3	CS3201 & CS3103	CS2312/CS2331
CS4297	Cloud Robotics and Automation	3	CS2310 and (CS3103 /CS4480 /CS4487)	Nil

<b>Course Code</b>	<b>Course Name</b>	<b>Unit</b>	<b>Prerequisite(s)</b>	<b>Precursor(s)</b>
CS4298	iOS Application Development	3	(CS2311/CS2312/CS2313 /CS2360) and (CS1303/CS2204/CS3201/CS3270)	Nil
CS4367	Computer Games Design	3	Nil	Nil
CS4381	Advanced Software Design	3	CS3342	MA2185
CS4385	Topics in Software Engineering	3	CS3342 /CS3367	Nil
CS4386	AI Game Programming	3	CS2310 /CS2311 /CS2312 /CS2313	Nil
CS4482	Advanced Database Systems	3	CS3402 /CS3462	Nil
CS4485	Information Retrieval	3	CS3402 /CS3462	Nil
CS4486	Artificial Intelligence	3	Nil	CS2468 /CS3334
CS4552	Guided Study	3	Completion of at least 60 credit units with an overall GPA of at least 2.0	Nil
EE4940	Digital Information Communications	3	Nil	[CS2113 /CS2115] & CS3201
IS4501	Information Systems Audit	3	(CS3311 & CS3312) or (CS3342 & CS3343)	Nil
MA2172	Applied Statistics for Sciences and Engineering	3	Nil	Nil