

**Catalogue Term 2015-16**  
**BSC4 Cohort 2014, BSCU4, BSCU3 and BSCU2 Cohort 2015**  
**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 ( <a href="#">EL0200</a> - 6 credits)   | 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 ( <a href="#">EL0200</a> - 6 credits)   | 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 /                                       | Calculus and Basic Linear Algebra I /         | 3           | (i) HKDSE Mathematics Compulsory Part, or<br>(ii) HKDSE Mathematics Compulsory Part and Extended Part Module 1, or<br>(iii) HKDSE Mathematics Compulsory Part and Extended Part Module 2 (Levels 1 – 3); or equivalent<br>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<br>(ii) HKDSE Mathematics Compulsory Part and Extended Part Module 2 (Levels 3 – 5); or equivalent  | Nil                 |
| MA1201 /                                       | Calculus and Basic Linear Algebra II /        | 3           | (i) MA1200 Calculus and Basic Linear Algebra I, or<br>(ii) Grade B or above in MA1100 Foundation Mathematics I (approval from MA must be obtained), or<br>(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<br>(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                 |
| 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 <b>two</b> 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 a 6-credit unit course ELO200 English for Academic Purpose prior to taking the GE English courses. The 6 credit units of ELO200 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) |
|-------------|-------------------------------|------|--|--------------|
| EL0200      | English for Academic Purposes | 6    | Grade E in HKAL Use of English or level 3 in HKDSE or successful completion of EAP Foundation Course | 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          |
| CS2310      | Computer Programming                              | 3    | CS1102 /CS1302  | Nil          |

| Course Code | Course Name                           | Unit | Prerequisite(s)  | Precursor(s)                               |
|-------------|---------------------------------------|------|--|--|
| 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)<br>AND<br>(CS2310/CS2311) |
| 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          |
| GE2324   | The Art and Science of Data   | 3    | Nil               | Nil          |

Choose any ONE from the following list:

| Course Code | Course Name                          | Unit | Prerequisite(s) | Precursor(s) |
|-------------|--------------------------------------|------|-----------------|--------------|
| 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>                        |  |      |  |                                    |
|--|--|------|--|------------------------------------|
| Course Code  | Course Name                                | Unit | Prerequisite(s)  | Precursor(s)                       |
| CS4286   | Internet Security and E-Commerce Protocols | 3    | CS3201 /CS3270   | MA2144 / MA2177 / MA2185 /MA2504 / |
| CS4293   | Topics on Computer Security                | 3    | (CS2310 /CS2311 /CS2331) & (CS3103) & (CS3201)         | CS4286                             |
| CS4394   | Information Security and Management        | 3    | Nil  | CS3102 /CS3103 /CS3161             |
| <b>Multimedia Computing Stream – Stream Core:</b>                        |  |      |  |                                    |
| Course Code  | Course Name                                | Unit | Prerequisite(s)  | Precursor(s)                       |
| CS3483   | Multimodal Interface Design                | 3    | CS2310 /CS2311 /CS2313 /CS2360                         | Nil                                |
| CS4182   | Computer Graphics                          | 3    | CS2303 /CS3334 /EE3206                                 | Nil                                |
| CS4185   | Multimedia Technologies and Applications   | 3    | (CS2310 /CS2311 /CS2313 /CS2331) and (CS2303 / CS3334) | Nil                                |
| <b>Software Engineering and Project Management Stream - Stream Core:</b> |  |      |  |                                    |
| CS3346   | Software Testing and Maintenance           | 3    | CS3342   | Nil                                |
| CS3356   | Managing Software Projects                 | 3    | CS3342 /CS3354   | Nil                                |
| CS4348   | Software Quality Management                | 3    | CS3342   | Nil                                |
| <b>Data Science Stream – Stream Core:</b>                                |  |      |  |                                    |
| Course Code  | Course Name                                | Unit | Prerequisite(s)  | Precursor(s)                       |
| 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> |   |             |  |  |
|-------------------------|---|-------------|--|--|
| <b>Course Code</b>      | <b>Course Name</b>                              | <b>Unit</b> | <b>Prerequisite(s)</b>                                       | <b>Precursor(s)</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  |
| CS4186                  | Computer Vision & Image Processing              | 3           | CS2303 or CS3334 or CS4335 or EE2331 or EE3131               | Nil  |
| CS4187                  | Computer Vision for Interactivity               | 3           | CS2303 / CS3334  | 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  |
| CS4292                  | Distributed Network Algorithms and Optimization | 3           | CS3201 / CS3270 /EE3311 /EE3900                              | 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>          |
|--------------------|--|-------------|--|------------------------------|
| #<br>CS4298        | iOS Application Development                        | 3           | (CS2312/CS2313/CS2360)<br>and (CS1303 /CS2204<br>/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<br>/CS2313  | Nil                          |
| CS4482             | Advanced Database Systems                          | 3           | CS3402 /CS3462   | Nil                          |
| CS4485             | Information Retrieval                              | 3           | CS3402 /CS3462   | Nil                          |
| CS4486             | Intelligent Systems                                | 3           | Nil  | CS2468 /CS3334               |
| CS4552             | Guided Study                                       | 3           | Completion of at least 60<br>credit units with an overall<br>GPA of at least 2.0 | Nil                          |
| EE4940             | Digital Information Communications                 | 3           | Nil  | [CS2113 /CS2115] &<br>CS3201 |
| IS4500             | Information Systems Project<br>Management          | 3           | (CS3311 & CS3312) or<br>(CS3342 & CS3343)  | Nil                          |
| IS4501             | Information Systems Audit                          | 3           | (CS3311 & CS3312) or<br>(CS3342 & CS3343)  | Nil                          |
| MA2172             | Applied Statistics for Sciences and<br>Engineering | 3           | Nil  | Nil                          |

# Subject to approval.