*(For students admitted in 2012-13 under the 3-year degree)*

# Curriculum for BEng in Computer Science (Information Engineering)

Two options are offered in this program: the Multimedia Computing Option and the Networking Option.

### *General Requirements*

Students are required to complete the following general requirements for graduation in addition to program specific requirements:

*Required Courses in English Communication*
*Common Core Requirements*
*Required Course in Physical Education*

For details please refer to the section "General Requirements" on this website.

### *Program Specific Requirements*

| | | | | Credit(s) |
|---|---|---|---|---|
| Required courses | | | | |
| | | COMP 1004** | Programming Fundamentals and Methodology | 4 |
| (1) | | COMP 1999 | Industrial Training | 0 |
| | | COMP 2012 | Object-Oriented Programming and Data Structures | 4 |
| | or | COMP 2012H | OOP and Data Structures (Honors Study Track)** | 4** |
| | | COMP 2611 | Computer Organization | 4 |
| (2) | | COMP 2711 | Discrete Mathematical Tools for Computer Science | 4 |
| (2) | or | COMP 2711H | Honors Discrete Mathematical Tools for Computer Science | 4 |
| | | COMP 3031 | Principles of Programming Languages | 3 |
| | | COMP 3111 | Software Engineering | 4 |
| | or | COMP 3111H | Honors Software Engineering | 4 |
| | | COMP 3511 | Operating Systems | 3 |
| | | COMP 3711 | Design and Analysis of Algorithms | 3 |
| | or | COMP 3711H | Honors Design and Analysis of Algorithms | 4 |
| | | COMP 4982 | Final Year Project | 7 |
| | or | COMP 4982H | Final Year Thesis (Honors Study Track) | 7 |
| | | ELEC 1100 | Introduction to Electro-Robot Design | 4 |
| | or | ELEC 2410 | Basic Electronics | 4 |
| | | IELM 2200 | Engineering Management | 3 |
| | | IELM 4110 | Engineers in Society | 1 |
| | | MATH 2011 | Introduction to Multivariable Calculus | 3 |

| | | | |
|---|---|---|---|
| | MATH 2111 | Matrix Algebra and Applications | 3 |
| | MATH 2351 | Introduction to Differential Equations | 3 |
| *For Multimedia Computing Option:* | | | |
| | COMP 4411 | Computer Graphics | 3 |
| | COMP 4421 | Image Processing | 3 |
| | COMP 4431 | Multimedia Computing | 3 |
| | ELEC 2600 | Probability and Random Processes in Engineering | 4 |
| or | IELM 2510 | Engineering Probability and Statistics | 4 |
| or | MATH 2411 | Applied Statistics | 4 |
| or | MATH 2421 | Probability | 4 |
| *For Networking Option:* | | | |
| | COMP 4621 | Computer Communication Networks I | 3 |
| | COMP 4622 | Computer Communication Networks II | 3 |
| | ELEC 2100 | Signals and Systems | 4 |
| | ELEC 2600 | Probability and Random Processes in Engineering | 4 |
| | ELEC 3100 | Signal Processing and Communications | 4 |

Elective courses

| | Elective types | | Minimum no. of courses | Minimum total credits |
|---|---|---|---|---|
| (3) | COMP | Computer Science Elective | | |
| | | *For Multimedia Computing Option* | 3 | 9 |
| | | *For Networking Option* | 1 | 3 |
| (3) | COMP/ ELEC/ MATH | Computer Science Elective/ Electrical and Electronic Engineering Elective/ Mathematics Elective | 2 | 6 |
| (4) | SB&M | Business and Management Elective | 1 | 3 |
| (3,4) | FREE | Free Elective | | |
| | | *For Multimedia Computing Option* | - | 2 |
| | | *For Networking Option* | - | 3 |

Other Requirements

| | | | |
|---|---|---|---|
| (5) | COMP 1900 | Academic and Professional Development I | 0 |
| | COMP 2900 | Academic and Professional Development II | 0 |
| | COMP 3900 | Academic and Professional Development III | 0 |

***Remarks on course(s):*

- COMP 1004: The course was last offered in 2012-13 and was deleted subsequently.
- COMP 2012H: The course title will be changed to "Honors Object-Oriented Programming and Data Structures" starting from Fall, 2014-15.
- COMP 2012H: The credit value will be changed to 5 starting from Fall, 2014-15.

Notes:

(1) Students are required to complete and pass a prescribed training program within the normal length of study. Details of the program, its requirements and schedule will be announced on the website of the Industrial Training Center (http://www.ust.hk/itc) or website of the department in the first year Fall term. Training normally takes place in the Winter and Summer terms starting from the first year of study. For recording the overall training results, students are normally registered for the course in their last term of study.

(2) With prior approval from the COMP UG Coordinator, students may take MATH 2343 to fulfill the requirement of COMP 2711/COMP 2711H.

(3) COMP 1001, COMP 1002 and COMP 1003 cannot be used to count toward the COMP elective requirement. ELEC and MATH electives must be at 2000-level or higher. ENGG 4950 can be used to count toward the COMP, ELEC or FREE elective requirement. Students on the COMP honors track may earn one extra credit through taking COMP 3711H in replacement of COMP 3711. Students who have earned a total of 3 extra credits through taking COMP 2971 (prior to 2012-13), COMP 3711H, COMP 3971 (prior to 2012-13) or COMP 4971 may reduce the COMP elective requirements by one course (three credits).

(4) Certain courses cannot be used to count toward the SB&M or FREE elective requirements. Students must check the departmental web site at http://www.cse.ust.hk/ug/faq-registration/ for the list of courses in concern.

(5) Students admitted through the School-based Admission Scheme are not required to take COMP 1900 in the Fall term of the first year.

A minimum of 101 credits is required for the BEng program in Computer Science (Information Engineering).