

2 Computing

2.1 Admission Requirements and Advanced Placement Credits

The School admits both A-level candidates and graduates from the local polytechnics. All candidates with good results can apply for advanced placement credits. Application for advanced credits must be made through the Sub-Dean (Undergraduate Programmes).

2.1.1 A-Level Candidates

A candidate must have a good pass in Mathematics (Syllabus A or C) at the GCE A-level. Additional selection criteria will be imposed as appropriate: Candidates who have taken Computing or Further Mathematics or Physics or Economics at GCE A-level are preferred.

For Computer Engineering programme, candidates must have good passes in Mathematics, and either Physics or Physical Science at the GCE "A" level.

Candidates with the following A-level grades will receive the corresponding module credits:

A-level Subject	A-level Grade	Module to be credited	Modular Credits
Computing	B and above	CS1101	5
Accounting	A	CS1304	3
Economics	A	EC1310	4
Further Maths	A	GM1101	3
Physics	A	PC1221	3

2.1.2 Polytechnic Graduates

The following polytechnic diplomas are acceptable for admission to SoC undergraduate programmes. Advanced placement is based on the relevant polytechnic diploma subjects a candidate has read. Candidates with either the *business* and *computing*-related diplomas are required to take business and computing related placement tests respectively on admission to Computing programmes.

Category 1: Polytechnic Graduates with Computing Diplomas

- i. Computer Information Systems (SP)
- ii. Computer Studies (NAP)
- iii. Information Technology (TP & NYP)
- iv. Programming & Systems (SP)

Candidates admitted under this category will be granted 34 MC consisting of:

- CS1101(5), CS1102(5), CS1104(4), CS1105(3), CS1303(3),
- CS3106 Independent Project(4), and
- 10 MC from Breadth Requirement.

Category 2: Poly Graduates with Computing-related Diplomas

- i. Computer Engineering (TP)
- ii. Electrical Engineering (SP & NAP)
- iii. Electronics, Computer & Communication Engineering (NYP and SP)
- iv. Electronics, Computer & Control Engineering (NYP)
- v. Electronic & Computer Engineering (NAP)
- vi. Electronic Engineering (NAP)
- vii. Electronics & Communication Engineering (SP)
- viii. Electrical & Electronic Engineering (NAP)
- ix. Electronics & Telecommunication Engineering (NAP)
- x. Internet Computing (TP)
- xi. Multimedia Software Engineering (SP)
- xii. Multimedia System Engineering (NYP)

A candidate that passes the computing related placement test will be granted 25 MC consisting of:

- CS1101(5), CS1105(3), CS1303(3),
- CS3106 Independent Project (4), and
- 10 MC from Breadth Requirement

Otherwise, the candidate will be granted 14 MC consisting of:

- CS3106 Independent Project (4), and
- 10 MC from Breadth Requirement

Category 3: Polytechnic Graduates with Business-related Diplomas

- i. Business (TP)
- ii. Business Administration (SP)
- iii. Business Studies (NAP)
- iv. Business Management (NYP)

Candidates with business diplomas as in above must have at least a B grade in Mathematics at the GCE 'O' level.

A candidate that passes the business related placement test will be granted 23 MC consisting of:

- CS1303(3), CS1304(3), EC1310(4), CS2251(3), and
- 10 MC from Breadth Requirement.

Otherwise, the candidate will be granted 10 MC from Breadth Requirement.

Placement tests for categories 2 and 3 are different and a candidate is **not allowed to take both tests**.

2.2 Degree Requirements and Programme Structure

The overall degree requirement is based on modular credits with at least 135 modular credits for the 4-year programmes and at least 105 modular credits for the 3-year programmes. As modules have different credits, the requirements translate roughly to

40 modules for the 4-year programmes and 30 modules for the 3-year programmes. **To graduate, a student must obtain a CAP of not less than 2.00.**

Each programme consists of modules divided into *five* main categories:

- (a) *common essential*
- (b) *programme essentials*
- (c) *program electives*
- (d) *breadth requirement*
- (e) *free electives*

All SoC undergraduate programmes share a set of **common essentials**. We expect students to read common essentials starting from the first semester. The common essential modules are:

1. CS1101/CS1101S Programming Methodology
2. CS1102 Data Structures and Algorithms
3. CS1104 Computer Organisation
4. CS1105 Computing and Society
5. CS2102/S Introduction to Database Systems
6. CS2103 Software Engineering
7. CS2105 Computer Networks I

Each programme has its own specific set of **programme essential modules**, to provide a basic foundation for the respective disciplines.

Programme Electives are grouped in eight broad areas of computer science and information systems:

- A1. Programming & Software Engineering
- A2. Computer Systems
- A3. Theory & Modelling
- A4. Humans & Computers
- A5. Management of Information Systems
- A6. Business & Technology
- A7. Embedded Systems
- A8. Technology Skills

Additionally, some programmes of study have their own elective areas. This grouping ensures that in selecting programme elective modules, students can have breadth (covering a few areas) and depth (taking many modules from one area).

The **Breadth Requirement** ensures that students received a broad-based education. This includes the **University Level Requirements (ULR)**. Students in the School of Computing will be placed under the Science and Technology subject group.

Students matriculated in 2001 except those from the University Scholars' Programme (USP) will be required to fulfil the University Level Requirements as reflected in the table:

	Steady State	Intake 2001 (Interim Period)
University Level Requirements	Modular Credits (MC)	Modular Credits (MC)
GEM	12MC(3 yr)/16 MC(4 yr)	8 MC (3 yr)/ 8 MC(4 yr)
Singapore Studies	4 MC	4 MC
Unrestricted elective modules outside student's Faculty	4 MC (3 yr)/ 8 MC(4 yr)	8 MC (3 yr)/ 16 MC(4 yr)
Total	20 MC(3 yr)/28 MC(4 yr)	20 MC (3 yr)/28 MC(4 yr)

There are 2 subject groups within which General Education Modules (GEM) are placed, namely,

- (i) Subject Group A: Science and Technology; and
- (i) Subject Group B: Humanities and Social Sciences.

During the interim period, students will be required to read at least one GEM from Subject Group B. Each GEM is worth 4 MCs. To facilitate broadening, the GEMs students select to read should not be those cross-listed with their declared major/minor areas.

Students need to read 1 Singapore Studies module. Singapore Studies modules carry the SS prefix. Students should ensure that they do not register a cross-listed module bearing the GE code for fulfilment of the SS requirement.

For unrestricted electives, students will be required to have a minimum of 8 MCs for a three year degree programme, and 16 MCs for a four year degree programme. The unrestricted elective modules must be from outside of the student's Faculty.

Free Electives can be modules selected from SoC or any other faculty to make up the total modular credits required by the programme.

Candidates will pursue largely common modules in the first two semesters. After two semesters, a candidate selects the appropriate programme based on his/her interest, career orientation and the results of modules taken. Transfer among programmes will be allowed for up to *four* semesters.