

30 July 2007

Curriculum Updates for BComp programmes

1 Changes to CS1105 Computing and Society

Modular credits, workload and CA components have been revised from semester 4, AY2006-7 onwards:

CS1105 Computing and Society

Modular Credits: 3

Workload: 1-1-0-3-3

Pre-requisite(s): Nil

Preclusion(s): IF1101/E; NM1101E

Cross-listing(s): Nil

Students will learn and analyse the social, ethical and professional issues of computing. Topics include 1) history of computing: hardware, software, and networks; 2) social implications of computing, internet, and network communication; 3) privacy and computing technologies; 4) methods, systems and tools of ethical arguments; 5) professionalism and ethical responsibility; 6) risk and liability of critical systems, examples, risk assessment, management; and 7) introduction to intellectual property. Case illustrations form an important part of the module.

Now, this module is assessed by 100% CA.

2 Introduction of Independent Study Modules for Special Programme in Computing

The School of Computing has introduced 6 ride-on module codes, 2 at each level: CSP2208, CSP2209, CSP3208, CSP3209, CSP4208 and CSP4209, to allow students in the Special Programme in Computing (SPC) to convert regular School of Computing modules into Independent Study modules.

3 Introduction of New Modules:

a. CS2100 Computer Organisation

This module will replace CS1104 Computer Organisation for all BComp programmes for students who have yet to complete/pass CS1104 by AY2006-7. Details are as follows:

CS2100 Computer Organisation

Modular Credits: 4

Workload: 3-1-1-3-2

Pre-requisite(s): CS1101 or CS1101S or CS1101C

Preclusion(s): CS1104 and students from the Department of ECE.

Cross-listing(s): Nil

The objective of this module is to familiarise students with the fundamentals of computing devices. Through this module students will understand the basics of data representation, and how the various parts of a computer work, separately and with each other. This allows students to understand the issues in computing devices, and how these issues affect the implementation of solutions. Topics covered include data representation systems, combinational and sequential circuit design techniques, assembly language, processor execution cycles, pipelining, memory hierarchy and input/output systems.

b. CS3108A/B Independent Work

CS3108A/B Independent Work are introduced for students in the Special Programme in Computing so that they have the flexibility to do more independent project work during their undergraduate studies.

CS3108A Independent Work

Modular Credits: 2

Workload: 0-0-0-5-0

Prerequisites: Nil

Preclusion: Nil

Cross-listing: Nil

This module allows students to explore their interest area within the computing field and at the same time learn how to take initiatives, plan and think critically, through the process of doing independent work. Students have to find a faculty mentor for the independent work and submit for approval a proposal outlining the learning objectives, schedule and evaluation criteria. The module will be graded by the faculty mentor and course coordinator as CS (Completed Satisfactorily) or CU (Completed Unsatisfactorily). Credit will be given for CS3108A (2MC) depending on the workload proposed.

CS3108B Independent Work

Modular Credits: 4

Workload: 0-0-0-10-0

Prerequisites: Nil

Preclusion: Nil

Cross-listing: Nil

This module allows students to explore their interest area within the computing field and at the same time learn how to take initiatives, plan and think critically, through the process of doing independent work. Students have to find a faculty mentor for the independent work and submit for approval a proposal outlining the learning objectives, schedule and evaluation criteria. The module will be graded by the faculty mentor and course coordinator as CS (Completed Satisfactorily) or CU (Completed Unsatisfactorily). Credit will be given for CS3108B (4MC) depending on the workload proposed.

c. CS3271 Software Engineering for Reactive Systems

This module is listed in area A7: Embedded Systems Technology.

CS3271 Software Engineering for Reactive Systems

Modular Credits: 4

Workload: 2-1-2-3-2

Pre-requisite(s): CS2271

Preclusion(s): Students from Department of Electrical and Computer Engineering

Cross-listing(s): Nil

Reactive systems are real-time systems that continuously interact with the environment. This module introduces students to the software engineering principles for designing systems such as controllers and signal processors that are used in a wide variety of settings, including industrial plants, chemical reactors, flight and automotive controllers and robots. Topics to be covered will include fundamentals of control software, programming languages for real-time controllers, and verification and optimisation of software for digital control systems. Apart from a variety of programming assignments, this course will also introduce students to some relevant research topics in this area.

4. **Changes to the Titles of 3 Bioinformatics Modules was made last AY**

The new titles for the 3 bioinformatics modules are:

- (i) CS3225 Combinatorial Methods in Bioinformatics
- (ii) CS4220 Knowledge Discovery Methods in Bioinformatics
- (iii) CS5238 Advanced Combinatorial Methods In Bioinformatics

Detailed module descriptions can be found at:

http://www.comp.nus.edu.sg/~cmcurric/AY2007_8/moddes2007_8.pdf

5. **Updates to CS3215 Software Engineering Project**

Change of Module Prerequisite:

From CS2103 Software Engineering to: CS2103 Software Engineering and CS2301 Business and Technical Communications

Change of Module Description:

The module requires students to work through, in groups, a complete Systems Development Life Cycle to develop a well-tested, production-quality large-scale software system. Students will apply best software engineering practices taught in CS2103 and CS3215. They will also sharpen their communication skills through close team interactions, consultations, and formal presentations. The module emphasises on an engineered design, efficient implementation and rigorous testing of software, as well as effective communications among students. Students will be assessed based on their understanding and ability to apply and communicate what they have learned in CS2103 and CS3215 on a real-life application system.

6. **Revision of the degree requirements for the following programmes:**

- a) Bachelor of Computing (Computational Biology),
- b) Bachelor of Computing (Communications and Media),
- c) Bachelor of Computing (Computer Engineering) and
- d) Bachelor of Computing (Computer Science).

Students could be granted permission to use CS3208/CS3209 Undergraduate Research in Computing I/II modules to replace appropriate level-3 modules in each programme of study.

Details:

The changes are:

- (i) Computational Biology(CB) programme: CS3208 and CS3209 can be used to replace up to two level-3 CB electives provided that the UROP project must be in the computational biology area and such approval must be granted by the UROP coordinator.
- (ii) Communications and Media programme: CS3208 and CS3209 can be used to replace CS3342 Interactive Media Development Project provided that the UROP project is in the media area and such approval must be granted by the UROP coordinator. However, students who are doing the concurrent programme with Carnegie Mellon University are required to complete CS3342.

- (iii) Computer Engineering and Computer Science programmes: CS3208 and CS3209 can be used to replace CS3215 Software Engineering Project provided that the UROP project contains significant programming content and such approval must be granted by the UROP coordinator.

7. New Project Module for concurrent degree: CS4349 Game Research Project

This module is to be taken by students in the concurrent BComp(CM) and MET programme.

CS4349 Game Research Project

Modular Credits: 12

Workload: 0-1-3-12-4 (1st Sem: Team work project)

Workload: 10 (2nd Sem: Independent project)

Prerequisites: CS4213. Department approval is required.

Preclusion: CS4343 and CS4101

Cross-listing: Nil

This module aims to build up students' ability in doing independent research in game technology by involving immersing themselves in team-based game development projects in the first semester, and independently advancing the game technology they have explored during the development projects in the second semester. The project may be proposed jointly by staff, students and industrial partners. Towards the end of the module, students are required to submit a report describing their work, and give oral presentation and demonstration before a panel of examiners.