

**City University of Hong Kong**  
**Course Syllabus**

**offered by Department of Electrical Engineering**  
**with effect from Semester B in 2020/2021**

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**Part I Course Overview**

**Course Title:** Computing Snapshot, Today and Tomorrow

**Course Code:** GE2316

**Course Duration:** One Semester (13 weeks)

**Credit Units:** 3

**Level:** B2

**Proposed Area:**  
*(for GE courses only)*

Arts and Humanities

Study of Societies, Social and Business Organisations

Science and Technology

**Medium of Instruction:** English

**Medium of Assessment:** English

**Prerequisites:**  
*(Course Code and Title)* Nil

**Precursors:**  
*(Course Code and Title)* Nil

**Equivalent Courses:**  
*(Course Code and Title)* Nil

**Exclusive Courses:**  
*(Course Code and Title)* Nil

## Part II Course Details

### 1. Abstract

The course enables students to recognize the fundamental concepts of contemporary computing and current AI computing. The course will use multiple disciplines applications, such as commerce, finance, health science, entertainments, and engineering. The course adapts a top-down approach, from applications and layers of computing technologies, to fundamental concepts of computing, such that the students become savvy on computing technology.

Computing and AI technologies has gotten into our everyday's living, business making and professional activities. Hence it is beneficial to learn basic know-how, and the concepts behind these technologies. The course will provide a snapshot on computing technologies on business, science and engineering disciplines.

This course aims to empower the students by providing an environment for self-initiative and freedom of topic choice, and promote cross-learning. It is unrealistic and unnecessary to learn everything concerning computing.

The course is composed of three parts:

- Basic computing and AI concepts;
- Computing and AI applications on various disciplines, and how these technologies extend knowledge and solve problems;
- Case-studies:

Applications in education, finance and banking, commerce, health, legal, games, social and leisure, and engineering etc.

About four students will form a discussion panel. They will present their group project summaries of a selected topic. The students in the audience will serve as adjudicators, and will fire questions for discussion, with the lecturer serving as the modulator.

## 2. Course Intended Learning Outcomes (CILOs)

(CILOs state what the student is expected to be able to do at the end of the course according to a given standard of performance.)

No.	CILOs <sup>#</sup>	Weighting* (if applicable)	Discovery-enriched curriculum related learning outcomes (please tick where appropriate)		
			A1	A2	A3
1.	Recognize general knowledge on computing and AI concepts.	35%	✓	✓	
2.	Describe general application concepts, structures, and methodologies of computing.	20%	✓	✓	
3.	Relate today's and speculate tomorrow's computing technology on various disciplines.	25%	✓	✓	✓
4.	Reflect on the computing and AI evolution, future applications of business, finance, legal, health, and entertainments, and case studies on applications. Recognize the ethical issue of technology.	20%	✓	✓	✓
		100%			

\* If weighting is assigned to CILOs, they should add up to 100%.

# Please specify the alignment of CILOs to the Gateway Education Programme Intended Learning outcomes (PILOs) in Section A of Annex.

A1: Attitude

Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

A2: Ability

Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to self-life problems.

A3: Accomplishments

Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

## 3. Teaching and Learning Activities (TLAs)

(TLAs designed to facilitate students' achievement of the CILOs.)

TLA	Brief Description	CILO No.						Hours/week (if applicable)
		1	2	3	4			
Lectures	Lectures on various computer related topics	✓	✓	✓	✓			18 hours
Tutorials	Tests, Quizzes and discussions	✓	✓	✓				11 hours
Class group activities	Show & Tell, Group Reports and Presentation, peer assessment	✓	✓	✓	✓			10 hours
		Timetabling Information:						3 hrs/wk (3 hrs Lect/Tut)

#### 4. Assessment Tasks/Activities (ATs)

(ATs are designed to assess how well the students achieve the CILOs.)

Assessment Tasks/Activities	CILO No.						Weighting *	Remarks
	1	2	3	4				
Continuous Assessment: <u>50%</u>								
Assignments and project (min 3)	√	√	√	√			10%	
Tests (min 2)	√	√	√	√			30%	
Presentation			√	√			10%	
Examination: ( 2hrs)								
Examination	√	√	√	√			50%	
							100%	

\* The weightings should add up to 100%.

#### Remark:

To pass the course, students are required to achieve at least 30% in the continuous assessment and 30% in the examination.

## 5. Assessment Rubrics

*(Grading of student achievements is based on student performance in assessment tasks/activities with the following rubrics.)*

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B, B-)	Fair (C+, C, C-)	Marginal (D)	Failure (F)
Coursework	Achievements in CILOs	High	Significant	Moderate	Basic	Not even reaching marginal levels
Examination	Achievements in CILOs	High	Significant	Moderate	Basic	Not even reaching marginal levels

**Part III Other Information** (more details can be provided separately in the teaching plan)

**1. Keyword Syllabus**

**Computing and AI systems**

Processor, memory, storage, big data, machine learning.

**Applications and application methodologies**

Finance, commerce, communication, legal, education, health science, information systems, and expert systems.

**Computing issues**

security, protection, online, real-time.

**Social challenges**

privacy, personal data, ethics (particularly on Internets), computing crimes.

**2. Reading List**

**2.1 Compulsory Readings**

*(Compulsory readings can include books, book chapters, or journal/magazine articles. There are also collections of e-books, e-journals available from the CityU Library.)*

	Nil

**2.2 Additional Readings**

*(Additional references for students to learn to expand their knowledge about the subject.)*

*Text book:*

1.	Brian K. Williams and Stacey Sawyer, "Using Information Technology", 10 <sup>th</sup> ed. McGraw-Hill, 2013. ISBN 978-0-07-131800-6.  Note: The book covers many aspects of computing, from binary to technological singularity, and provides "Practical Action" and "Experience Box" in each chapter, to discuss topics of general interest, such as time management, critical thinking, tips for avoiding spyware, how to protect one's data and identity from getting stolen, and how to do Web research and plagiarism, etc.
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Online Resources from public domain:

<http://www.wikipedia.org/>

<https://www.google.com/webhp?complete=1&hl=en>

Other Internet public information websites.

**Annex**  
**to Form 2B (GE)**

A. Please specify the Gateway Education Programme Intended Learning Outcomes (PILOs) that the course is aligned to and relate them to the CILOs stated in Part II, Section 2 of this form:

<b>GE PILO</b>	<b>Please indicate which CILO(s) is/are related to this PILO, if any (can be more than one CILOs in each PILO)</b>
PILO 1: Demonstrate the capacity for self-directed learning	Group project and presentations, term-paper.
PILO 2: Explain the basic methodologies and techniques of inquiry of the arts and humanities, social sciences, business, and science and technology	Group project and presentations, quizzes.
PILO 3: Demonstrate critical thinking skills	Group project and presentations, panel discussion, term-paper, quizzes.
PILO 4: Interpret information and numerical data	Group project and presentations, and term-paper .
PILO 5: Produce structured, well-organised and fluent text	Group project and presentation, and term-paper
PILO 6: Demonstrate effective oral communication skills	Panel discussion and presentation
PILO 7: Demonstrate an ability to work effectively in a team	Class and panel discussion and presentation
PILO 8: Recognise important characteristics of their own culture(s) and at least one other culture, and their impact on global issues	
PILO 9: Value ethical and socially responsible actions	Class and panel discussion,.
PILO 10: Demonstrate the attitude and/or ability to accomplish discovery and/or innovation	Class discussions and presentations, and a short paper and a term paper

*GE course leaders should cover the mandatory PILOs for the GE area (Area 1: Arts and Humanities; Area 2: Study of Societies, Social and Business Organisations; Area 3: Science and Technology) for which they have classified their course; for quality assurance purposes, they are advised to carefully consider if it is beneficial to claim any coverage of additional PILOs. General advice would be to restrict PILOs to only the essential ones. (Please refer to the curricular mapping of GE programme:*

*[http://www.cityu.edu.hk/edge/ge/faculty/curricular\\_mapping.htm](http://www.cityu.edu.hk/edge/ge/faculty/curricular_mapping.htm).)*

PILO 1: Students choose topics basically from CILOs 3 and 4 but not limited to, for presentations and panel discussions, and term-papers, under the lecturer's guidance.

PILO 2: CILOs 1 and 2 contribute to science and technology, and CILOs 3 and 4 are related to humanities, and social activities.

PILO 3: Presentations and panel discussions, and term-papers from potentially all CILOs show critical thinking skills of three levels: recognizing, comprehending, and applying.

PILO 4: Interpret information and numerical data on computing results, with real and/or simulation data.

PILO 5: To conduct presentations and term-papers from CILOs 2, 3 and 4, require well-organized and fluent text.

PILO 6: All CILOs are candidates for presentations and panel discussions, to enrich the students' oral communication skills.

PILO 7: Panel discussions of groups on all CILOs require team work.

PILO 9: Through case studies involving ethics and social responsibility.

PILO 10: Through class discussions and presentations, and a short paper and a term paper.

- B. Please select an assessment task for collecting evidence of student achievement for quality assurance purposes. Please retain at least one sample of student achievement across a period of three years.

<b>Selected Assessment Task</b>
Final examination