

SS3904: SCIENCE, TECHNOLOGY AND SOCIETY FOR COMPUTING

Effective Term

Semester A 2022/23

Part I Course Overview

Course Title

Science, Technology and Society for Computing

Subject Code

SS - Social and Behavioural Sciences

Course Number

3904

Academic Unit

Social and Behavioural Sciences (SS)

College/School

College of Liberal Arts and Social Sciences (CH)

Course Duration

One Semester

Credit Units

3

Level

B1, B2, B3, B4 - Bachelor's Degree

Medium of Instruction

English

Medium of Assessment

English

Prerequisites

Nil

Precursors

Nil

Equivalent Courses

AIS 3301 Science, Technology and Society for Computing

Exclusive Courses

Nil

Part II Course Details

Abstract

This course aims to (a) explore ethical and legal issues relevant to computer professionals, and help students to develop informed analysis of these issues; (b) review Hong Kong laws and ordinances which are especially relevant for computer professionals; (c) appreciate and anticipate recent and on-the-horizon developments and applications of computing and robotics in the sciences and social sciences, entertainment, commerce, and government, which provide new opportunities and challenges for computing professionals; (d) express informed views about the reasons why high-technology industries and sciences prosper more in some regions than in others, and apply this analysis to policy issues for high-tech industries in Hong Kong.

Course Intended Learning Outcomes (CILOs)

	CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Apply basic features of those Hong Kong laws relevant for computing professionals, including the Personal Data Privacy Ordinance Computer Crimes Ordinance, and Copyright Ordinance, to professional practice	20	x		
2	Analyze ethical and social issues relevant for computing professionals, including software copying, e-waste, personal data security, and internet control and security	30	x	x	
3	Describe innovative recent and on-the-horizon uses of computing in AI and robotics, the sciences (eg. climate modelling, using distributed computing), social sciences (eg. demography and demographic software), and government (eg. for information exchange with citizens)	30	x	x	
4	Explain variations in innovation in high-tech industries and in the sciences in various regions (Europe, China, U.S., Silicon Valley) with comparisons to HK	20	x	x	

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 real-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.

Teaching and Learning Activities (TLAs)

	TLAs	Brief Description	CILO No.	Hours/week (if applicable)
1	Lectures	Weekly lectures, with topics prepared and presented by lecturer. The lecturer may assign student to read essential and/or supplementary readings concerning the topics.	1, 2, 3, 4	
2	Tutorials	Beginning from the 5th week, approximately one hour weekly will be reserved for tutorial discussion. The purpose is to allow students to present and discuss the progress of their selected program evaluation proposal (group project), and their critique of selected program evaluation research report (individual project).	1, 2, 3, 4	
3	Class participation and short assignments	The lectures are supported by in-class participation and short assignments on selected issues of academic and practical interests	1, 2, 3, 4	
4	Term paper	The Term paper assignment requires students to write a mini-paper of not more than 1,500 words	2, 3, 4	
5	Group presentation	Students are required to form small groups to prepare a program evaluation proposal. There will be oral presentation from each group on the main content of their proposal at the end of the teaching week (week 12).	2, 3, 4	

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks (e.g. Parameter for GenAI use)
1	Term paper	2, 3, 4	30	
2	Short assignments	1, 2, 3, 4	20	

3	Class Participation, presentations	1, 2, 3, 4	20	
4	Quiz	1, 2, 3, 4	30	

Continuous Assessment (%)

100

Examination (%)

0

Assessment Rubrics (AR)**Assessment Task**

1. Term paper

Criterion

1. Organisation: Refers to format and presentation: logical structure, good use of headings where appropriate# effective presentation.
2. Originality: Refers to original thinking, creativity, innovative analysis
3. Analysis: Refers to the quality, clarity, and depth of the analytical work involved in addressing questions and issues
4. Research effort: Includes resourcefulness, effort, and diligence in the search for and presentation of suitable information
5. English writing: Grammar, spelling, sentence construction, etc.
6. Referencing: Refers to the use of an accurate referencing system, appropriate citations in the essay, and avoidance of plagiarism.

Excellent (A+, A, A-)

an excellent paper# very good mastery of the ideas or concepts, with excellent or innovative analysis. A is on the edge of this category, but still very good

Good (B+, B, B-)

a solid paper with reasonably good analysis and use of information.

Fair (C+, C, C-)

documentation, analysis, writing, use of concepts, referencing, and effort are mostly adequate for a passing grade, but with enough flaws and shortcomings that it cannot be judged to be “good” or “very good” .

Marginal (D)

barely a pass. Many serious flaws and shortcomings, but adequate effort and some research

Failure (F)

does not demonstrate the minimum research effort and documentation# or substantial plagiarism

Assessment Task

2. Group presentation

Criterion

1. Organisation: Refers to format and presentation: logical structure, good use of headings where appropriate# effective presentation.
2. Originality: Refers to original thinking, creativity, innovative analysis
3. Analysis: Refers to the quality, clarity, and depth of the analytical work involved in addressing questions and issues
4. Research effort: Includes resourcefulness, effort, and diligence in the search for and presentation of suitable information
5. Ability in communication: English proficiency

Excellent (A+, A, A-)

an excellent presentation# very good mastery of the ideas or concepts, with excellent or innovative analysis. A is on the edge of this category, but still very good

Good (B+, B, B-)

a solid presentation with reasonably good analysis and use of information.

Fair (C+, C, C-)

documentation, analysis, use of concepts, referencing, and effort are mostly adequate for a passing grade, but with enough flaws and shortcomings that it cannot be judged to be “good” or “very good” .

Marginal (D)

barely a pass. Many serious flaws and shortcomings, but adequate effort and some research

Failure (F)

does not demonstrate the minimum research effort and documentation

Part III Other Information

Keyword Syllabus

Legal and ethical issues for computer professionals; intellectual property rights and digital piracy; personal data privacy ordinance; computer crime; telecommunications ordinance; professional ethics and responsibilities for computing professionals. E-waste issues in computing and computer industry. Computers and artificial intelligence. Internet innovations in education and government. Role of computing in demography and demographic modelling. Role of computing and computing professionals in analyzing environmental and climate change. Internet and computing in the globalization of knowledge.

Reading List

Compulsory Readings

	Title
1	Isaacson. W. (2014) The innovators : how a group of hackers, geniuses, and geekscreated the digital revolution. New York : Simon & Schuster.
2	O'Regan, G. (2012) A brief history of computing [electronic resource] 2nd Ed. London :Springer.
3	Shelly, G. B., and Vermaat, M. E. (2011) Discovering Computers 2011: living in adigital world Boston : Course Technology/Cengage Learning.

Additional Readings

	Title
1	Association for Computing Machinery Code of Ethics and Professional Conduct: http://www.acm.org/about/code-of-ethics
2	Basel Action Network, and Silicon Valley Toxics Coalition (2002) Exporting Harm:The High-Tech Trashing of Asia. Seattle, WA.
3	Business Software Alliance, Hong Kong: http://www.bsa.org/hongkong
4	Castells, M. (2007) Mobile communication and society [electronic resource] : a globalperspective. Cambridge, Mass. : MIT Press.
5	Richard Freeman (2006) The Great Doubling, 2006 http://eml.berkeley.edu/~webfac/eichengreen/e183_sp07/great_doub.pdf
6	Goldsmith, J. and Wu, T. (2006) Who Controls the Internet? Illusions of a BorderlessWorld. N.Y.: Oxford University Press.
7	Meadows, D., Randers, J. & Meadows, D. (2004) Limits to Growth: The 30 yearupdate. White River Junction, Vt. : Chelsea Green Pub
8	Mokyr, J. (2005) “Intellectual Origins of Modern Economic Growth” Journal of Economic History Vol 65, 2. http://faculty.wcas.northwestern.edu/~jmokyr/SanJose-big2.pdf
9	Office of the Privacy Commissioner for Personal Data, Hong Kong: http://www.pcpd.org.hk/
10	Porter, M., (2008) The Five Forces that Shape Strategy, HBR. https://hbr.org/2008/01/the-five-competitive-forces-that-shape-strategy/ar/1
11	Ricken, B. and Malcotts B. (2011) The competitive advantage of regions and nations [electronic resource] : technology transfer through foreign direct investment. Publisher Burlington, Vt. : Ashgate Pub. Co.
12	Smith, T. Sonnenfeld, D. A., and Pellow, D. N. (2006) Challenging the Chip: Labor Rights and Environmental Justice in the Global Electronics Industry. Philadelphia: Temple University Press.
13	State of the World's Cities 2008/9 - Harmonious Cities, UN Habitat http://www.unhabitat.org/pmss/listItemDetails.aspx?publicationID=2562
14	Telecommunications Ordinance (Hong Kong): Unauthorized access to computer by telecommunications: http://www.legislation.gov.hk/blis_ind.nsf/e1bf50c09a33d3dc482564840019d2f4/3ad35679ec4de876c82564800040c24f?OpenDocument
15	The Great Doubling, Richard Freeman (2006) http://emlab.berkeley.edu/users/webfac/eichengreen/e183_sp07/great_doub.pdf