University of Macau
Department of Computer and Information Science
CISB 112 – Information Technology, Professionalism and Ethics
Syllabus
1st Semester 2014/2015
Part A – Course Outline

Compulsory course in Computer Science

Catalog description:

Basic notions for an efficient use of computers. General overview of hardware architecture, organization and components; data processing; a brief introduction to concepts of system software, data communications, software uses, applications; the role and use of Internet. Reliability, threats, privacy and security. Intellectual property, professional ethics, software engineering code of ethics, rules of Conduct, ethics in practice.

Prerequisites:

- None

Textbook(s) and other required material:

- Peter Norton, *Introduction to Computers*, 6th edition, McGraw-Hill 2006.
- HKIE, *Rules of conduct*, available online in UMMoodle.
- HKIE, *Ethics in practice*, available online in UMMoodle.

References:

- Michael J. Quinn, *Ethics for the Information Age*, 4th edition, Pearson 2011.

Course objectives:

1. Introduce to students the fundamental concept of contemporary information technology. [j]
2. Learn to collaborate and use Internet to search for latest information about computer systems. [h]
3. Introduce to students the professionalism, ethics, and societal issues in computing [f]

Topics covered:

1. **What is Computer? (2 hours)** Definition of computer; History of Computing; Types of computers; Computers for organizations; How computers affect our society? What is computer system? How computers process data (Hardware)? Computer software; Data & Users.
2. **Basic Input Devices (2 hours):** Types of input devices; Input devices for hand; Optical input devices; Audiovisual input devices.
3. **Output Devices (2 hours):** Types of monitors; Properties of a monitor; Graphics / Video card; Other audiovisual output devices; Sound systems; Printing devices; High quality printers.
4. **Transforming Data into Information (2 hours):** How computers represent data; Processing unit; Memory; Factors affecting processing speed; Modern CPUs; Evaluation of processors; Standard ports.
5. **Types of Storage Devices (2 hours):** Magnetic storage; Optical storage; Solid-state storage; Measuring drive performance; Improving drive performance; Drive interface.
6. **Operating System Basics (2 hours):** What are operating systems? Types of operating systems; User interface; Running programs & enhances operating systems; Survey of PC operating systems; Other operating systems; Functions of network operating systems; Types of network operating systems; Operating systems for handheld devices.
7. **Productivity Software (2 hours):** Types of software; Common application software; Graphics and Multimedia; Acquiring images; Different graphics software.
8. **Networks Basics (4 hours):** Network definition; The uses of a network; Types of networks; Different ways to build up a network; Shapes of a network; Network media; Network cabling; Network hardware; Network protocols; Data communications in the society.
9. **Internet (2 hours):** History of Internet; Internet services (Application software); How can we access Internet? Doing business in the online world.
10. **Reliability, threats, privacy and security (3 hours):** Computer reliability; Basic security concepts; Different threats to users; Different threats to hardware; Different threats to data; Avoid identity theft; Protecting Privacy; Malware; Protecting our system.

11. **Professionalism (1.5 hours):** Copyright, patents, trademarks, and intellectual property; Fair use, protection for software; What is a profession, characteristics of a profession, current status of computer science professionalism.
12. **Ethics and societal context (3.5 hours):** Software engineering code of ethics, analysis of the code, whistleblowing, rules of conduct (HKIE), ethics in practice (HKIE).

Class/practice schedule and credits:

Timetabled work in hours per week			No of teaching weeks	Total hours	Total credits	No / Duration of exam papers
Lecture	**Tutorial**	**Practice**				
2	Nil	2	14	56	3	1 / 2 hours

Contribution of course to meet the professional component:

This course introduces to students the fundamental concepts and terminologies of computer system, Internet, and data communication. Professionalism including code of ethics for computer professionals is presented. In addition, this course provides an environment for students to collaborate, communicate, and use Internet tool to access latest information. This course gets the students prepared to study in the major of computer and information science.

Relationship to CIS program objectives and outcomes:

This course primarily contributes to CIS program outcomes that develop student abilities to:
(f) an understanding of professional and ethical responsibility
(h) the broad education necessary to understand the impact of engineering solution in a global, economic, environmental, and societal context
(j) a knowledge of contemporary issues

Course content distribution:

Maths	Basic Sciences	Professional and Ethics	Complementary Studies	Computer Studies	Total 100%
0	0	20	50	30	100

Persons who prepared this description:
Prof. Chi Man VONG

Part B General Course Information and Policies

1st Semester 2014/2015

Instructor: Prof. Chi Man Vong Office: E11-4013
Office hour: by appointment Phone: 8822 4357
Email: cmvong@umac.mo

Time/Venue: Mon 1:30 pm – 3:20 pm, E22-G013 (Lecture)
Wed 11:00 am – 12:50 pm, E6-2093 (Practice)
Fri 2:00 pm – 3:50 pm, E6-2025 (Practice)

Grading distribution:

Percentage Grade	Final Grade	Percentage Grade	Final Grade
100 - 93	A	92 - 88	A–
87 - 83	B+	82 - 78	B
77 - 73	B–	72 - 68	C+
67 - 63	C	62 - 58	C–
57 - 53	D+	52 - 50	D
below 50	F		

Comment:
The objectives of the lectures and the slides are to explain and to supplement the text material. Students are responsible for studying the text material for fully understanding. Students are encouraged to look at other sources (other texts, etc.) to complement the lectures and the text.

Computer group project policy:
Computer group project is a powerful learning experience and also an effective training to improve interpersonal skill and collaboration, because students in CIS will collaborate with others for analysis, design, and computer programming in their future careers; therefore:

- There are 3 group presentations.
- The group presentations are related to the topics discussed in lectures. The time for presentation are scheduled during semester and announced through UM Moodle (http://ummoodle.umac.mo)

Note:

- Check Moodle (http://ummoodle.umac.mo) for announcement, project presentation schedule, and lectures. Report any mistake on your grades within one week after posting.
- No make-up exam is given except for CLEAR medical proof.
- Cheating is absolutely prohibited by the university.

Student Disabilities Support Service:

The University of Macau is committed to providing an equal opportunity in education to persons with disabilities. If you are a student with a physical, visual, hearing, speech, learning or psychological impairment(s) which substantially limit your learning and/or activities of daily living, you are encouraged to communicate with your instructors about your impairment(s) and the accommodations you need in your studies. You are also encouraged to contact the Student Disability Support Service of the Student Counselling and Development Section (SCD), which provides appropriate resources and accommodations to allow each student with a disability to have an equal opportunity in education, university life activities and services at the University of Macau. To learn more about the service, please contact SCD at scd.disability@umac.mo, or 8822 4901 or visit the following website:
http://www.umac.mo/sao/scd/sds/aboutus/en/scd_mission.php