

# City University of Hong Kong

## Information on a Course offered by Department of Information Systems with effect from Semester B in 2013 / 2014

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### Part I

Course Title: Cloud Services and Big Data Analytics

Course Code: IS4133

Course Duration: One Semester (13 weeks)

No. of Credit Units: 3

Level: B4

Medium of Instruction: 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

#### 1. Course Aims:

*This course aims to*

- Introduce the foundations and applications of data communication networks in enterprises;
- Explain the basic technologies and terminologies of Internet networking;
- Describe the strategies and considerations of businesses and management with regard to Internet communication.

## 2. Course Intended Learning Outcomes (CILOs)

*Upon successful completion of this course, students should be able to:*

No.	CILOs	Weighting (if applicable)	DEC Dimensions (Ability/Attitude/ Accomplishment)
1.	Explain the tools and techniques of data communications and networking in businesses.	3	
2.	Describe network technologies and identify their differences in implementation within and across enterprises.	3	Ability and attitude
3.	Assess issues of network security and effective management of data communication networks.	3	
4.	Explain the use of data communication networks in business environments.	2	

(3: Relatively most focused CILOs; 2: moderately focused CILOs; 1: less focused CILOs)

## 3. Teaching and Learning Activities (TLAs)

*(designed to facilitate students' achievement of the CILOs)*

*Indicative of likely activities and tasks students will undertake to learn in this course. Final details will be provided to students in their first week of attendance in this course.*

Lecture : 2 hours per week  
Workshop : 1 hour per week

- TLA1. Lecture: Concepts related to fundamentals of data communication and networking, different types of networks and communication services and network security and management are explained by instructor.
- TLA2. Mini-case discussions: Minute cases will be given out in tutorial sessions where the students can apply what they have learnt in lectures to come up with recommendations of a suitable network design or a suitable network service for the cases provided.
- TLA3. Practical/Workshop: By making use of network monitoring software and going through network-related commands, the students can visualize the data communications going on behind the scene.

TLA4. Project: The students are required to work on a group project where they relate data communication network applications to a selected business environment.

CILO No	TLA1	TLA2	TLA3	TLA4	Hours/week (if applicable)
CILO 1	2	1	1	1	---
CILO 2	2	2		2	---
CILO 3	2	1	1	1	---
CILO 4	1	2		2	---

(1: Indirectly Supporting CILO; 2: Directly Supporting CILO)

#### 4. Assessment Tasks/Activities

*(designed to assess how well the students achieve the CILOs)*

*Indicative of likely activities and tasks students will undertake to learn in this course. Final details will be provided to students in their first week of attendance in this course.*

AT1. Coursework (40%): This will comprise of a group project (25%) and tutorial participation (15%). A group project, which includes a project report and presentation, will be allocated to let students apply the knowledge and skills acquired in the course to propose and identify alternatives using modern network infrastructures to meet the current and future data communication needs of the selected business system.

AT2. Mid-term test (20%): This test is to be held at mid-term to assess the students' understanding on the basic concepts and terminology on data communications and networking.

AT3. Examination (40%, one 2-hour exam): A written examination is developed to assess student's competence level of the taught subjects.

\*\* Students must pass BOTH coursework and examination in order to get an overall pass in this course. \*\*

CILO No	AT1 (40%)	AT2 (20%)	AT3 (40%)	Remarks
CILO 1	1	2	2	1 – ILO moderately assessed by AT; 2 – ILO heavily assessed by AT.
CILO 2	2	1	1	
CILO 3	1		2	
CILO 4	2		1	

(1: CILO moderately assessed by AT; 2: CILO heavily assessed by AT)

**5. Grading of Student Achievement:** Refer to Grading of Courses in the Academic Regulations.

Grading pattern: Standard (A+, A, A- ... C-, D, F)

CILO	Excellent	Good	Adequate	Marginal
CILO1	Accurately describe all key concepts, and effectively compare and discriminate among the key concepts;	Accurately describe all key concepts;	Accurately describe most key concepts;	Accurately describe some key concepts;
CILO2	Accurately describe all the different types of networks (LAN, Wireless, MAN & WAN, Internet) and all corresponding technologies available in implementing such networks within and across enterprises.	Accurately describe all the different types of networks (LAN, Wireless, MAN & WAN, Internet) and a number of corresponding technologies available in implementing such networks within and across enterprises.	Accurately describe some types of networks (LAN, Wireless, MAN & WAN, Internet) and a number of corresponding technologies available in implementing such networks within and across enterprises.	Accurately describe some types of networks (LAN, Wireless, MAN & WAN, Internet) and a marginal number of technologies available in implementing such networks within and across enterprises.
CILO3	Accurately describe all key issues pertaining to network security and effective management of data communication networks and can identify all the available tools covered in the lecture.	Accurately describe all key issues pertaining to network security and effective management of data communication networks and can identify most tools covered in the lecture.	Accurately describe most issues pertaining to network security and effective management of data communication networks and can identify some tools covered in the lecture.	Accurately describe some key issues pertaining to network security and effective management of data communication networks and can identify a few tools covered in the lecture.
CILO4	Demonstrate a cogent ability to integrate all of the concepts and design techniques learnt to develop an effective data communication network to meet all data communication requirements in a business context.	Demonstrate an ability to integrate most of the concepts and design techniques learnt to develop an effective data communication network to meet most data communication requirements in a business context.	Demonstrate an ability to integrate some of the concepts and design techniques learnt to develop an effective data communication network to meet some of the data communication requirements in a business context.	Demonstrate an ability to apply only a few concepts and design techniques learnt to develop a data communication network to meet a few data communication requirements in a business context.

### **Part III**

Keyword Syllabus:

5-layer Internet Model; Web applications; Network models and applications; Protocols; Network mediums; TCP/IP; HTTP; SMTP; POP3/IMAP; IPv4 and IPv6; Subnet; NAT; LAN; WAN and MAN; Wireless network; Network security and management.

Textbook:

James Kurose, Keith Ross, Computer Networking: A Top-Down Approach, 6<sup>th</sup> edition, 2012.