# City University of Hong Kong

## Information on a Course offered by Department of Electronic Engineering with effect from Semester A 2011/12

**Part I**

Course Title: Telecommunication Networks

Course Code: EE5412

Course Duration: One Semester (13 weeks)

No. of credits: 3

Level: P5

Medium of Instruction: English

Prerequisites: Nil

Precursors: Nil

Equivalent Course: Nil

Exclusive Courses: Nil

**Part II**

**Course Aims:**

The course aims to provide students with an understanding of the general fundamental concepts in telecommunication networks and services.

**Course Intended Learning Outcomes (CILOs)**
*Upon successful completion of this course, students should be able to:*

| No. | CILOs |
|---|---|
| 1. | Describe the principles of voice and data network technologies |
| 2. | Explain the principles of wireless networks technologies |
| 3. | Explain the Local area network technologies |
| 4. | Explain the Inter-networking technologies |
| 5. | Demonstrate the principles of high speed networking technologies |

**Teaching and learning Activities (TLAs)**
*(Indicative of likely activities and tasks designed to facilitate students' achievement of the CILOs. Final details will be provided to students in their first week of attendance in this course)*

| CILO | Teaching and Learning Activities |
|---|---|
| 1, 2, 3, 5 | Lecture |
| 4 | Lecture, laboratory |

Timetabling Information

| Pattern | Hours |
|---|---|
| Lecture: | 26 |
| Tutorials: | 13* |
| Laboratory: | |
| Other activities: | |

*Some of the tutorials will be conducted in the laboratory.

**Assessment Tasks/Activities**

*(Indicative of likely activities and tasks designed to assess how well the students achieve the CILOs. Final details will be provided to students in their first week of attendance in this course)*

| | *Type of assessment tasks* | *Weighting (if applicable)* |
|---|---|---|
| Continuous Assessment | Assignments, test, Lab work | 30% |
| Examination | Written exam | 70% 2 hours |

Remarks: To pass the course, students are required to achieve at least 35% in course work and 35% in the examination. Also, 75% laboratory attendance rate must be obtained.

**Grading of Student Achievement: - Pls consider amending it according to the recommended sample attached.**

| Letter Grade | Grade Point | Grade Definitions |
|---|---|---|
| A+<br>A<br>A- | 4.3<br>4.0<br>3.7 | Excellent |
| B+<br>B<br>B- | 3.3<br>3.0<br>2.7 | Good |
| C+<br>C<br>C- | 2.3<br>2.0<br>1.7 | Adequate |
| D | 1.0 | Marginal |
| F | 0.0 | Failure |

**Constructive Alignment with Programme Outcomes**

| PILO | How the course contribute to the specific PILO(s) |
|---|---|
| 1,2,3 | Students are able to understand the general principles in various telecommunication network technologies. Students are required to implement a simple network in the lab. |

**Part III**

**Keyword Syllabus:**

Voice network
Telephone network, teletraffic, link dimensioning, routing

Mobile network
Ad Hoc Network, Cellular Network, capacity, media access, bluetooth

Local area network
Network sharing techniques

Inter networking
TCP, IP, congestion control

High speed network [ATM]
Architecture; Services; Protocol; Traffic control; Adaptation Layer

**Laboratory Experiment:**
Laboratory will reinforce students' understanding of data network.

**Recommended Reading:**

Leon-Garcia and Widjaja: Communication Networks, 2nd Edition, (McGraw-Hill, 2003)

Pahlavan: Principles of Wireless Networks (Prentice Hall, 2002)

Wisniewski: Wireless and Cellular Networks (Prentice Hall, 2005)

Stallings W: ISDN AND Broadband ISDN with Frame Relay and ATM (4th Edition, Prentice-Hall, 1998)

Keiser: Local Area Networks (McGraw-Hill, 2002)

Comer: Computer Networks and Internets (Prentice Hall, 2001)

Girard A: Routing and Dimensioning in Circuit-Switched Networks, (Addison Wesley, 1990)

Maufer: IP Fundamentals (Prentice Hall, 1999)

Halsall F: Data Communications, Computer Networks and OSI, (4th Edition, Addison Wesley, 1996)

Tanenbaum A S: Computer Networks, (4th Edition, Prentice-Hall, 2002)