City University of Hong Kong
Course Syllabus

offered by Department of Electronic Engineering
with effect from Semester B in 2017/2018

Part I Course Overview

Course Title:	Advanced Internet Technologies
Course Code:	EE5413
Course Duration:	One Semester (13 weeks)
Credit Units:	3
Level:	P5
Medium of Instruction:	English
Medium of Assessment:	English
Prerequisites: *(Course Code and Title)*	Nil
Precursors: *(Course Code and Title)*	EE5412 Telecommunication Networks
Equivalent Courses: *(Course Code and Title)*	Nil
Exclusive Courses: *(Course Code and Title)*	Nil

Part II Course Details

1. Abstract

This course aims to initiate students to explore the advanced technologies which are implemented, developed or under research in the rapid changing area of the Internet.

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	Weighting (if applicable)	Discovery-enriched curriculum related learning outcomes (please tick where appropriate)		
			A1	*A2*	*A3*
1.	Describe the general concepts and characteristics of the Internet application layer protocols and standards.		✓	✓	✓
2.	Apply programming skills for creating interactive web pages.		✓	✓	✓
3.	Recognize the latest network security techniques in the Internet.		✓	✓	✓
4.	Recognize the latest technologies for Internet multimedia application in practice.		✓	✓	✓
		100%			

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			
Lecture	Key concepts of advanced internet technologies are described and illustrated	✓	✓	✓	✓			2 hrs/wk
Tutorial	Key concepts are worked out based on questions and problem solving	✓	✓	✓	✓			1hr/wk (*Tutorials may be substituted with lectures/laboratories)*
Case study	Demonstrate the working principles and apply key concepts of internet problems	✓	✓					
Mini Project	Mini-projects to encourage students to discover various internet technologies		✓					

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: 30%								
Quizzes and at least 3 assignments (mini-projects etc.)	✓	✓	✓	✓			30%	
Examination: 70% (duration: 2hrs)								
							100%	

Remark:

To pass the course, students are required to achieve at least 30% in course work 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)
1. Examination	Achievements in CILOs	High	Significant	Moderate	Basic	Not even reaching marginal level
2. Coursework	Achievements in CILOs	High	Significant	Moderate	Basic	Not even reaching marginal level

6. Constructive Alignment with Programme Outcomes

PILO	How the course contribute to the specific PILO(s)
1, 2, 3, 4	This course aims to provide students with amble opportunities in acquiring knowledge of the advanced Internet technologies. Upon completion of this course, students will gain an adequate background for being Internet developers or administrators.
3, 4	Students are required to complete an assignment designed to gain practical programming skills in implementing interactive web pages, and knowledge of the Internet application layer protocols and standards.

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

1. Keyword Syllabus

Internet Application Layer Protocols and Standards
Architecture and Protocol, Internet Request for Comment (RFC),Domain Name System, DNS Name Space, Gateway-To-Gateway Protocol (GGP), Address Resolution Protocol (ARP), Information Locating : HTTP/1.1, Hypertext Markup Language (HTML), VOIP.

Interactive Web Page Design
CGI-BIN Scripting and Interfacing, Perl Programming, PHP Server-side HTML Embedded Scripting Language, JavaScript Client-side Scripting Language.

Network Security
Internet Security Threats, Hacker, Network Viruses, Public and Private Keys, Data Encryption Standard, RSA, Digital Signature, SHA, MD, X.509 Certificate, Firewalls.

Internet Multimedia Technologies
Multimedia : Definitions, Requirements, Standardized data Formats for Multimedia, Multimedia Compression, Multimedia Data Transfer using Proprietary Protocols.

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.)

1.	HTML, JavaScript, and Advanced Internet Technologies, Karl Barksdale, E. Shane Turner,

2.2 Additional Readings

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

1.	Subrata Goswami, Internet Protocols: Advances, Technologies and Applications, Springer, 2003.
2.	S. Dunaev, Advanced Internet Programming: Technologies & Applications, Charles River Media, 2001.
3.	Uyless Black, Advanced Internet Technologies, Prentice Hall, 1999.
4.	IEEE Internet Computing Magazine, IEEE Computer Society.