City University of Hong Kong
Course Syllabus

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

Part I   Course Overview

Course Title:	Internet Client-Server Computing
Course Code:	EE5816
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)*	Knowledge of Java Programming and Applications
Equivalent Courses: *(Course Code and Title)*	Nil
Exclusive Courses: *(Course Code and Title)*	CS4273 Distributed System Technologies and Programming

Part II Course Details

1. Abstract

This course aim is to provide students with fundamental knowledge needed to design and implement object-oriented client-server applications.

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.	Comprehend the basic concepts of the client-server model and the fundamental Java classes for network programming.		✓	✓	
2.	Implement multi-thread distributed applications.		✓	✓	
3.	Process text-based as well as multimedia data.		✓	✓	
4.	Design distributed applications using the Java Remote Method Invocation (RMI) framework.		✓	✓	✓
5.	Design web-based applications using JavaScript, Java servlet and Java server page (JSP).		✓	✓	✓
		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	5		
Lecture	Basic concepts of distributed computing, and implementation of multi-thread programs.	✓	✓	✓	✓	✓		2 hrs/wk
Tutorials in laboratory	Provide hands on experiences in Java program design.	✓	✓	✓	✓	✓		1 hr/wk
Assignments	Provide hands on experiences in Java program design.	✓	✓	✓	✓	✓		
Self study	Get familiar with the classes and interfaces available in the Java JDK.	✓	✓	✓	✓	✓		

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	5			
Continuous Assessment: <u>40%</u>								
At least 3 assignments and tutorials	✓	✓	✓	✓	✓		20%	
Test	✓	✓	✓	✓	✓		20%	
Examination: <u>60%</u> (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, 3, 5	This course provides essential knowledge and techniques for designing and implementing software systems. Students have ample opportunities to practice these skills with modern software development tools.

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

1. Keyword Syllabus

Quick review of the Java language. Basic concepts. Internet protocols. Ports and addresses.

Multi-threaded program design. Synchronization and deadlock. Thread safe programs.

Socket programming. Multi-threaded servers. Example applications, e.g. sending emails, file transfer, etc.

Java Media Framework. Processing of audio, image and video data.

Java Database Connectivity. Java transactions. Database locking and isolation.

Remote method invocation. Callback notification. Dynamic object activation.

Web-based applications. HTML form processing. Java Servlet. Java Server Page. JavaScript.

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.	*Jan Graba*, An Introduction to Network Programming with Java, Pearson Addison Wesley 2003.
2.	*C. S. Horstmann, G. Cornell*, Core Java2 Vol. II – Advanced Features, Sun Microsystems Press, 2005.
3.	*H. M. Deitel*, *P. J. Deitel*, Internet & World Wide Web How to Program, 5th Ed., Prentice Hall 2012.

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

1.	Java SE 8 API : http://java.sun.com/javase/8/docs/api/