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:	Java Network Programming
Course Code:	EE5805
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)*	CS2363 Computer Programming or equivalent; Experiences in software design, and knowledge in Data Structures and Relational Database are preferred
Equivalent Courses: *(Course Code and Title)*	Nil
Exclusive Courses: *(Course Code and Title)*	Nil

Part II Course Details

1. Abstract

The aim of this course is to provide students with an understanding of the concepts and techniques of object-oriented design and Internet application development. Java, a prime object-oriented programming language for Internet application, is used as the instruction and implementation tool.

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.	Solve general computation problems using the Java language.		✓	✓	
2.	Implement event-driven graphical user interface to interact with users.		✓	✓	✓
3.	Implement Java programs to manipulate data stored in a relational database.		✓	✓	
4.	Design web-based applications using Applet, Servlet, JSP, and JavaScript.		✓	✓	✓
		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			
Lectures	Key concepts of Java program design with emphasis on web-based applications and network communications.	✓	✓	✓	✓			2 hrs/wk
Tutorials	Provide hands on experiences in Java program design.	✓	✓	✓	✓			2 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				
Continuous Assessment: 50%								
Tutorial and at least 3 assignments	✓	✓	✓	✓			30%	
Test	✓	✓	✓	✓			20%	
Examination: 50% (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 provides essential knowledge and techniques for designing and implementing software applications in Java. Students will acquire hands-on experiences and improve their programming skills through the practical trainings offered in this course.

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

1. Keyword Syllabus

Overview of Object-oriented principles and design
Objects and classes; information hiding; encapsulation; data abstraction; inheritance and polymorphism; discovering class relationships; unified modeling language (UML) and diagrams.

Basic features of the Java language
Java technologies and platform; basic Java syntax and conventions; classes and interfaces; packages; inheritance and dynamic binding; data structures and collections; generic programming; Function interfaces and lambda expressions; I/O and exception handling; threads and issues in multithreaded program design; parallel computation using the fork/join framework; socket programming

GUI programming
Frame and Applet; graphical user interface components; layout management; event-driven processing.

Processing data stored in relational database
Overview of relational database; Database queries using SQL; Java Database Connectivity.

Web-based applications
Overview of the HTTP protocol; HTML form processing; Java Servlet and Java Server Page; Java Script Accessing relational database in web applications.

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.	Nil

2.2 Additional Readings

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

1.	*Jan Graba*, An Introduction to Network Programming with Java, Addison Wesley
2.	H. M. Deitel, and P. J. Deitel, Internet & World Wide Web How to Program, 5th Ed., Prentice Hall 2012, ISBN: 978-0-13-21500-9
3.	*K. Sharan,*Beginning Java 8 Language Features, Lambda Expressions, Inner Classes, Threads, I/O, Collections and Streams, Apress, 2015

4.	Java SE 8 API Specification	http://java.sun.com/javase/8/docs/api/
5.	Java EE 6 API Specification	http://java.sun.com/javaee/6/doces/api/
6.	Sun Java Tutorials	http://java.sun.com/docs/books/tutorial/index.html