

Kathmandu University School of Management
Bachelor of Business Administration
Course Syllabus

Course Title	COMPUTER PROGRAMMING
Course Code Number	COM 314
Credit Hours	3
Course Objective	
Main Objective	<p>This course is meant for the students who major Information System (IS) in Bachelor of Business form Faculty of Management Kathmandu University. It introduces of basic concept of programming and particular of object oriented programming using JAVA.</p> <p>The course aims to enable the students to write simple Java applications also explorer the concept of problem solving skill using tools such as algorithm and flowchart.</p>
Enabling objectives:	<p>After completing the course the students will be able to</p> <ul style="list-style-type: none"> ○ Understand and improve their lexical, syntactical and programming competence. ○ Write, modify, compile, debug, and execute Java programs. ○ Design and build programs using problem-solving techniques such as top-down approach ○ Demonstrate usage of control structure, modularity, classes, I/O and the scope of the class members. ● Demonstrate adeptness of object oriented programming in developing solution to problems demonstrating usage of data abstraction, encapsulation and inheritance.
Learning Unit	
Learning Unit One Net Contact Hours -7 hrs	1. Introduction to Programming Language and Object Oriented Concepts Programming overview, Program Design (Algorithm, Flowcharts, Pseudocode) , The Java Technology, Solving common compiler and interpreter problems; Overview of Object Oriented Paradigm: Object, Message, Class, Inheritance, Interface
Learning Unit Two Net Contact Hours – 11 hrs	2. Language Basics Variables, Data types, Operators, Expression, Statements, Blocks, Control statements (Sequencing structure Selecting structure and different between them, Practical Hands-on Working Examples using if, Block if, nested if, switch statements, Looping structure: Practical Hands-on Working Examples based on counter controlled repetition, sentinel controlled repetition, Differentiate between exit level and entry level loop. Nested loop: Practical Hands-on Working Examples.
Learning Unit Three Net Contact Hours - 4 hrs	3. Arrays Types, Operations, Searching and Sorting
Learning Unit Four Net Contact Hours – 12 hrs	4. Classes and Inheritance Creating Classes and Objects, Encapsulation, Managing Inheritance, Polymorphism, Creating and Implementing Nested and Inner Classes, Creating and Implementing Interfaces, Creating and Using Package.
Learning Unit Five Net Contact Hours - 5 hrs	5. Object Basics and Simple Data Objects Life Cycle of Object, Numbers, Characters and Strings, Buffered Reader input, String Tokenizer
Learning Unit Six Net Contact Hours - 8 hrs	6. Essential Java Classes Exceptions, Threads, Files

Learning Unit Seven Net Contact Hours - 1 hrs	7. JAR Files Using JAR files, Signing and Verifying JAR files, JAR-related APIs
Learning Unit 8 Practical	<p>DECLARATIONS & OPERATORS</p> <ul style="list-style-type: none"> • Declaring Primitives & Reference Variables • Java Arrays, Multi-Dimensional Arrays Practical (Hands-on Working Examples) • Using Operators Practical (Hands-on Working Examples) <p>FLOW CONTROL</p> <ul style="list-style-type: none"> • Conditional Statements • Looping Statements Practical (Hands-on Working Examples) • Branching Statements Practical (Hands-on Working Examples) <p>CLASSES & METHODS</p> <ul style="list-style-type: none"> • Declaring Classes Practical (Hands-on Working Examples) • Defining Methods • Use Static methods, JavaBeans Naming Practical (Hands-on Working Examples) • Develop Constructors Practical (Hands-on Working Examples) <p>OBJECT ORIENTED PROGRAMMING (OOP) CONCEPTS</p> <ul style="list-style-type: none"> • Describe Encapsulation, Use Polymorphism & Inheritance Practical (Hands-on Working Examples) • Develop Interfaces, Abstract Classes & Nested Classes Practical (Hands-on Working Examples) • Method Overriding, Overloading & Constructor Overloading Practical (Hands-on Examples) <p>PACKAGES</p> <ul style="list-style-type: none"> • Defining and Importing packages • Access and non-Access Specifiers Practical (Hands-on Working Examples) • Explore java.lang package – Using String & Wrapper classes Practical (Hands-on Working Examples) <p>EXCEPTION HANDLING</p> <ul style="list-style-type: none"> • About Java Exception Handling & Exception Hierarchy • Using try-catch Blocks Practical (Hands-on Working Examples) • “throws” keyword, throwing an Exception & “finally” Statements Practical (Hands-on Working Examples) <p>THREADS & NETWORKING</p> <ul style="list-style-type: none"> • Introduction to Java Multithread Programming • Creating a Thread – Implementing Runnable & Extending Thread

	<p>Practical (Hands-on Working Examples)</p> <ul style="list-style-type: none"> • Creating Multiple Threads <p>I/O STREAMS</p> <ul style="list-style-type: none"> • An overview of the java.io package • Byte Stream Classes – Byte Arrays, File I/O & Buffering <p>Practical (Hands-on Working Examples)</p> <ul style="list-style-type: none"> • Character Stream – Char Arrays, File I/O & Buffering <p>Practical (Hands-on Working Examples)</p> <ul style="list-style-type: none"> • Serialization using the java.io package <p>Practical (Hands-on Working Examples)</p>						
Total Contact Hours	48 hrs* (excluding assessment, Laboratory work and final examination)						
Basic Text	<ol style="list-style-type: none"> 1. Schildt, H. (20012). <i>The Complete Reference Java2</i>. Tata McGraw-Hill New Delhi India 2. Campione, M., & Walrath, K. (2003). <i>The Java Tutorial</i>. Addison-Wesley. 						
Other References	<ol style="list-style-type: none"> 1. Horstman, C., & Cornell, G. (n.d.). <i>Core Java Volume-I</i>. Prentice Hall. 2. Horstman, C., & Cornell, G. (n.d.). <i>Core Java Volume-II</i>. Prentice Hall. 						
Evaluation Scheme	<table> <tr> <td>In-Semester evaluation</td> <td>50%</td> </tr> <tr> <td>End-Semester evaluation</td> <td>50%</td> </tr> <tr> <td>Total</td> <td>100%</td> </tr> </table>	In-Semester evaluation	50%	End-Semester evaluation	50%	Total	100%
In-Semester evaluation	50%						
End-Semester evaluation	50%						
Total	100%						

Note:

- Above mentioned net contact hours are except assignment, exam and lab work. Some extra contact hours for practical parts need to be afforded.
- The thematic team members suggested near about 20 hours of practical classes at least.

Updated February 2017