Course Outline

Course Name : Object-Oriented Programming   (0306216)

Prerequisite Course Name: Computer Programming 2 (0306211)

Lecturer Name: Salah F. Saleh

Lecturer Office Number: 217D

Lecture Time: 2:00 – 3:30 (Mon,Wed)

Office Hours: 12:30 –1:30 (Mon, Wed)

Intended Learning Outcomes (ILOs):

- Student will has skills of

    1. Structuring data and information.

    2. Analysis, prediction, and generalization.

    3. Formal methods and description techniques.

- Student will be able to

    1. Use the computer tools effectively to solve practical problems.

    2. Recognize and analyze criteria and specifications to specific problem.

    3. Work effectively as part of a team.

    4. Do independent learning and continue professional development.

Contents Outline:

Subject	Hours
1. Introduction Characteristics of Java, Java applications, Anatomy of Java application, Java applet, Anatomy of the applet program, Identifiers, Variables, Constants, Data types, Shortcut operators, Control structures.	*3*
2. Methods Declaring and creating methods, Calling methods, Parameter passing, Overloading methods, Creating methods in separate classes, Recursion.	*3*
3. Programming with Objects and Classes Declaring and creating objects, Constructors, Modifiers, Passing objects to methods, Instance variables and class variables, Instance methods and class methods, Packages.	*3*

4. Arrays and Strings Array declaring, creating and initialization, Working with arrays, Arrays of objects, Copying Arrays, Multidimensional arrays, String class, StringBuffer class, StringTokenizer class.	*3*
5. Class inheritance Superclass and subclass, Calling superclass constructor, Calling superclass methods, Overriding methods, Using modifiers, Polymorphism, Interface.	*6*
6. Introduction to Graphics Programming The Java class hierarchy, Frames, Event-driven programming, Adapters, Layout manager, Panels, Drawing classes.	*3*
7. Creating User Interface and Mutimedia Introduction to user interface, Using Java components, playing audio, Display images.	*6*
8. Applets and Advanced Graphics The Applet class, The Japplet class, The <applet> HTML tag, Passing parameters to Applet, Mouse events, Keyboard events.	*3*
9. Exception Handling Exception types, Throwing and Catching exceptions.	*3*
10. Input/Output InputSream and Reader, OutputStream and Writer, Processing external files, File Dialogs.	*3*
11. Multithreading Introduction, thread class, thread priority, synchronization.	*3*

Text Book:

- Y. Daniel Liang, *"Introduction to Java programming with Microsoft visual J++ 6.0"*, Prentice Hall, 2000.

Useful References:

- Deitel and Deitel, "Java: how to program", Prentice Hall, 1999.

- Tom Swam, "Tom Swam's Mastering Java with Visual J++", SAMS, 1997.

Teaching Methods:
- Lectures
- Lab Assignments.
- Project.
- Practical Training Sessions.
- Tutorial.

Assessment:
- First Exam: 15
- Second Exam   15
- Home works   5
- Quizzes   5
- Project   10
- Final   50

Good Luck