**Course Module:** Advanced Programming

**Module Code:** CoSc-M2081

**Module ECTS:** 23

**Course Title:** Object Oriented Programming

**Course Code:** CoSc2082

**Course ECTS:** 6

**Target Group:** Computer Science (Ex-Deg11)

**Academic Year:** 2012(II)

**Lecture Hr.** :

**Laboratory Hr.**

**Instructor Name:**

Email:

Office:

1. **Course Description**

This programming course emphasizes the methodology of programming from an object-oriented perspective and software engineering principles. It allows students to develop the ability to analyses programming problems and design and document suitable solutions and to implement reliable and robust software using contemporary program design methods. Topics to be dealt with are: classes: data abstraction, information hiding, overloading; inheritance; polymorphism; exceptions handling,

1. **Course Goals or Learning Outcome: Upon successful completion of the course, students will be able to:**

* Explain and implement the basic object oriented concepts
* Successfully code, debug and run programs with Any Text Editor , JCreator , Net IDE
* Work on more advanced programs written in Java
* Have clear differentiation between structural and object oriented programming paradigms
* Understand and Implement additional and new concepts such as exception handling

1. **Prerequisites:** Fundamentals of Programming-II
2. **Expectations:**

Students are expected to attend all lectures and laboratory sessions with serious discipline and complete the required assessments. Thus, intensive reading of course texts and frequent practice of laboratory activities are expected from students. Students are strongly encouraged to collaborate with one another in studying the textbook and the lecture material, while they are not permitted to collaborate on exams.

1. **Summary of Assessment Methods:**

* Continuous Assessment (50%)
  + Test-1(10%)
  + Test-2 (10%)
  + Ind. Ass (5%) in each Lab Session
  + Lab Exam (10%)
  + Project (15%)
* Final Exam (50%))

1. **Reference Books/Required Texts**

Text Book:

* Deitel & Deitel, Java How to Program. 9/10/11 th ed. Prentice Hall

References:

* The Complete Reference, Java 2, fifth edition
* Teach Yourself Java in 21 Days

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| Week | Topic |
| Week-1 & Week-3 | Chapter-1: Introduction to OOP  * 1. Introduction to Programming   2. Types of Programming Paradigm   3. Programming Language   4. Overview of OOP Principles   5. Overview of java programming and types of java program   6. Definition of Java App, Java Applets   7. Editing, Compiling and Interpreting   8. Java Virtual Machine(JVM) and Byte Codes |
| Week-2 & Week-3 | Chapter-2: Basics in java programming  * 1. Introduction to java Application   2. Structure/anatomy of java programming   3. Variable types and identifier   4. Number types , String Constant   5. Input/output   6. Comments on java   7. Operator and Operator precedence   8. Type Conversation /casting |
| Week-4 & Week-5 | Chapter-3: Control Statements  * 1. Selection statements   2. Repetition statement   3. Loop Control statements   4. Methods(functions) and Array |
| Week-6 & Week-7 | Chapter-4: Objects and Class  * 1. Object Variable   2. Declaring class   3. instantiating and using Objects   4. instance field , Construction and Methods   5. Constructors   6. Other important concepts |
| Week-8 - 11 | Chapter-5: OOP Concepts  * 1. Data Hiding and Encapsulation   2. Inheritance   3. Method overloading and over riding   4. Polymorphism   5. Abstract class and Interface |
| Week-12 & Week-13 | Chapter-6: Exception Handling  * 1. Exception Handling Overview   2. Exception Handling Syntax |
| Week 14 &15 | Java Applets  * 1. Overview of Java Applets   2. Java Applets Vs Java Application |
| Week 16 | Final Exam |

**Approval Page**

**Prepared By: (Instructor)**

Name:

Sig.:

Date: 27/06/2012 E.C

**Checked By: (HoD)**

Name: Molalegne T.

Sig.:

Date: 26/07/2012 E.C

**Approved By: (Dean)**

Name:

Sig.:

Date: 26/07/2012 E.C

*“Write Once Run Every Where”*