**University of Management and Technology**

**Course Outline**

**Course code: CS150L Course title: OBJECT ORIENTED PROGRAMMING Lab**

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| Program | BS Electrical Engineering |
| Credit Hours | 1 |
| Duration | 15 weeks |
| Prerequisites | CS-141 Programming Fundamentals |
| Resource Person | **Asma Umar** |
| Counseling Timing | As on website. |
| Contact | [asma.umar@umt.edu.pk](mailto:asma.umar@umt.edu.pk) |

**Chairman/Director signature………………………………….**

**Dean’s signature…………………………… Date…March 2015…………….**

**Learning Objective:**

Upon completion of this course, students will:

* Will have a sound understanding of object oriented programming concepts
* Develop strong programming skills in Java using APIs.
* Understand elements of classes, objects, inheritance, polymorphism and their application to various problems in computing and engineering.
* Become familiar with Java’s error and exception handling mechanism.
* Be able to design and code Graphical User Interfaces.
* Become familiar with the latest developments in the world wide web

**Learning Methodology:**

Lab Manuals, interactive discussions, hands-on practice in lab, formal assessments.

**Grade Evaluation Criteria**

Following is the criteria for the distribution of marks to evaluate final grade in a semester.

**Marks Evaluation Marks in percentage**

Sessionals(Weekly Lab Experiments) 40%

Final exam 60%

Total 100%

**Recommended Text Books:**

Bruce Eckel, ‘Thinking in Java’ Latest edition.(4th), 2006.

**Reference Books:**

Java: How to Program By Dietel 9th Ed., 2011 and

Beginning Java2 by I. Horton, 2011.

Java2: The Complete Reference by P. Naughton & H. Schildt, 1996

**Calendar of Course contents to be covered during semester**

**Course code: CS150 Course title: OBJECT ORIENTED PROGRAMMING**

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| **Week** | **Experiment Contents** | **Reference Chapter(s)** |
| 1 | **Algorithms, Errors, and Testing** | TB: p.41-60  Every Thing is an Object |
| 2 | **Primitive data types and logical operations** | TB: p.63-91  Operators  TB: p.93-106  Controlling Execution |
| 3 | **Control programming flow**  **if statement, switch statement, for loop, while loop, do-while loop, continue, break, nested loops** | TB: p.107-119 |
| 4 | **Classes and Object** | TB: p.107-143 |
| 5 | **Inheritance and Interfaces in Classes** | TB: p.165-217 |
| 6 | **Multiple Constructors, Inheritance and Interfaces** | TB: p.219-241 |
| 7 | **Array and String classes in java** | TB: p.355-389 |
| 8 | **Mid Term Exam** |  |
| 9 | **Multiple Constructors and toString() method**  **in JAVA classes** | Internet + Lab Manual |

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| --- | --- | --- |
| 10 | **Inheritance Vs Composition**  **Polymorphism** | TB: p.276-301 |
| 11 | **Basic I/O concepts,**  **Exception Handling,**  **File Handling** | TB: p.647-677 |
| 12 | **Basic Graphical User Interface Components** | TB: p.933-945 |
| 13 | **Events and Event Handling** | TB: p.945-951 |
| 14 | **Inner Classes ,**  **Adapter Classes**  **Hands-on OO programming in Java: Lab 5** | TB: p.243-272 |
| 15 | **Upcoming technologies & techniques**  **Android**  **J2ME** | Internet + Lab Manual |