Module (Course Syllabus) Catalogue

2023-2024

College/ Institute	**Erbil Technical Engineering College**	
Department	**Information System Engineering**	
Module Name	**Advance Object Oriented Programming**	
Module Code	**AOP401**	
Degree	**Technical Diploma** ☐ **Bachelor** ■ **High Diploma** ☐ **Master** ☐ **PhD** ☐	
Semester	**4th Semester**	
ECTS (Credits)	**6**	
Module type	**Prerequisite** ☐ **Core** ■ **Assist.** ☐	
Weekly hours		
Weekly hours (Theory)	**(2)hr Class**	**(54)Total hrs Workload**
Weekly hours (Practical)	**(2)hr Class**	**(108)Total hrs Workload**
Number of Weeks	**12**	
Lecturer (Theory)	**Dana Farhad Abdulqadir**	
E-Mail	**Dana.farhad@epu.edu.iq**	
Lecturer Practical	**Ibrahim shamal abdulkhaleq**	
E-Mail	**ibrahim.abdulkhaliq@epu.edu.iq**	
Websites	**https://moodle.epu.edu.iq/course/view.php?id=562**	

Course Book

<table>
<tr><td>Course Description</td><td colspan="5">The course is generally aimed at making the student familiar with the general concepts common to Object Oriented Programming paradigms and presents the fundamental notions and techniques used in Object oriented programming. It starts with universal basics, relaying on object concepts and gradually extends to advanced issues.</td></tr>
<tr><td>Course objectives</td><td colspan="5">This course introduces fundamental concepts in Object Oriented Programming and reviews important concepts in Programming Language; it also attempts to develop good programming skills and habits, the course has a heavy programming component, to be completed using Java Programming Language.</td></tr>
<tr><td>Student's obligation</td><td colspan="5">Student's obligation in the Computer application course is:
• Attendance in the all lectures.
• One or more quizzes in each course.
• Exam in Mid Term and end of Course.</td></tr>
<tr><td>Required Learning Materials</td><td colspan="5">•Using data show, white board and PowerPoint, Testing in department’s Laboratory.
•Publish all lectures and notes in google classroom and Moodle account.</td></tr>
<tr><td rowspan="11">Evaluation</td><td colspan="2">Task</td><td>Weight (Marks)</td><td>No.</td><td>Relevant Learning Outcome</td></tr>
<tr><td rowspan="3">Assignments</td><td>Class Activity</td><td>%2</td><td>1</td><td>Be active during class</td></tr>
<tr><td>Report</td><td>%5</td><td>1</td><td>Prepare report about OOP concepts.</td></tr>
<tr><td>Project</td><td>%8</td><td>1</td><td>Create small project using OOP concept.</td></tr>
<tr><td colspan="2">Lab Report and Activity</td><td>%10</td><td>3</td><td>Solve oop using tools and code</td></tr>
<tr><td colspan="2">Quiz and homework</td><td>%10</td><td>4</td><td>solve problems of oop</td></tr>
<tr><td colspan="2">Midterm Exam</td><td>%10</td><td>1</td><td></td></tr>
<tr><td colspan="2">Lab Midterm Exam</td><td>%15</td><td>1</td><td></td></tr>
<tr><td colspan="2">Final Exam</td><td>%20</td><td>1</td><td></td></tr>
<tr><td colspan="2">Lab Final Exam</td><td>%20</td><td>1</td><td></td></tr>
<tr><td colspan="2">Total</td><td>%100</td><td></td><td></td></tr>
</table>

Specific learning outcome:	On successful completion of this module, students should be able to gain knowledge of Object-Oriented programming concepts and the following: • Understand Object-Oriented Programming concepts and techniques. • Understand the fundamentals of programming in java. • Be able to design and implement Object-Oriented software to solve moderately complex problems. • Be able to write good program documentation.
Course References:	• Paul Deitel , Harvey Deitel - Java How To Program, 10th Edition (Early Objects). • C. Thomas Wu, An Introduction to Object-Oriented Programming with Java, Fifth Edition

Course Topics (Theory) and (Practical)	**Week**	**Learning Outcome**
Inheritance	1,2,3	The related between super and sub class, override of methods.
Polymorphism	4,5	Relationships Among Objects in an Inheritance Hierarchy and Calling Superclass Methods from Subclass Objects.
Abstract class	6,7	Abstract Classes and Methods, Inheriting Interface and Implementation
Midterm Exam	8	
Interface	9	
GUI components part1 with Project	10,11	Overview of Swing Components, JLabel, TextFields,JButton, JCheckBox and JRadioButton
GUI components part2 with Project	12,13	Creating a Customized Subclass of JPanel and JPanel Subclass that Handles Its Own Events
Final Exam	14	

Questions Example Design

Q1. output:

Q / what is the output of the following code?

```
Class Adder
{
Static int add (int a, int b) {return a+b};
static double add (double a, double b) {return a+b};
}
Class TestOverloading2 {
Public static void main (String [] args)
{
System.out.println(Adder.add(11,11));
System.out.println(Adder.add(12.3,12.6));
}}
```

Solution:

22

24.9

External Evaluator

I confirm that the syllabus given the attached course book is sufficient and covers the required areas needed for the students.

Signature

Assist Lecturer Mohammad Qasim

15-1-2024