|  |  |  |
| --- | --- | --- |
|  | **East West University**  **Department of Computer Science and Engineering**  **Course Outline of CSE110**  **Fall 2019 Semester** |  |

**Course Information**

**Course: CSE110 Object Oriented Programming (Section 5)**

**Credit and Teaching Scheme:**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Theory | Laboratory | Total |
| Credits | 3.0 | 1.5 | 4.5 |
| Contact Hours | 3 Hours/Week for 13 Weeks | 3 Hours/Week for 13 Weeks | 6 Hours/Week for 13 Weeks |

**Prerequisite:** CSE106 Discrete Mathematics

**Instructor Information**

**Instructor**: Yeasir Rayhan

Lecturer, Department of Computer Science and Engineering

**Office**: Room # 201(AB-2)

**Tel. No.**: 01793167491

**E-mail**: yrp111@ewubd.edu

**Course Site: https://sites.google.com/site/yeasirrayhan111/cse110**

**Class Routine and Office Hour**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Day** | **08:30–10:00** | **10:10–11:40** | **11:50–01:20** | **01:30–03:00** | **03:10–04:40** | **4:50-6:50** |
| **Sun** | **CSE 225**  **AB2 205** | **Office**  **Hour** | **CSE 101**  **529** | **Office**  **Hour** |  | **CSE110**  **638** |
| **Mon** | **Office**  **Hour** | **CSE 205**  **109** | **Office**  **Hour** | **CSE110**  **AB2 502** |  |  |
| **Tue** | **CSE225**  **638** | **Office**  **Hour** |  |  |  |  |
| **Wed** | **Office**  **Hour** | **CSE 205**  **109** | **Office**  **Hour** | **CSE110**  **AB2 502** |  |  |
| **Thu** | **CSE 225**  **AB2 205** | **Office**  **Hour** | **CSE 101**  **AB2 205** |  |  |  |

**Course Objective**

This course presents a conceptual and practical introduction to object-oriented programming (OOP). The course will cover general principles of programming in object-oriented frameworks to enhance transferable skills, such as programming, designing, and problem-solving skills. This course introduces object-oriented concepts and develops OOP programs which provides solutions to real-world object-oriented problems. Java is primarily chosen as the programming language in this course. Knowledge of this course will be needed as prerequisite knowledge for CSE207 Data Structures.

**Course Outcomes (COs)**

After completion of this course students will be able to:

|  |  |
| --- | --- |
| CO1 | **Understand** and **apply** the basics of elementary programming in the target languageand concepts related to the definition, creation and usage of classes and objects for writing object-oriented programs. |
| CO2 | **Use** the principles of inheritance and polymorphism and **design** abstract classes and interfaces for implementing object-oriented programs. |
| CO3 | **Apply** object-oriented programming concepts, exception handling, file handling, graphical user interface (GUI), multi-threaded programming and generics for solving object-oriented problems. |
| CO4 | **Choose** appropriate tools, **perform** and **demonstrate** skills and **write** report to design, build, and test realistic object-oriented applications. |

**Course Topics, Teaching-Learning Methods and Assessment Scheme**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Course Topic** | **Teaching-Learning Method** | **CO** | **Mark of Cognitive Learning Levels** | | **Mark of COs** | **Exam (Mark)** |
|  |  |  | C2 | C3 |  |  |
| Principles of Object-Oriented Programming and Basics of Elementary Programming in Java (conditional branching, looping, methods and arrays) | Lecture, Class Discussion, Discussion Outside Class with Instructor/ Teaching Assistant | **CO1** | 5 | 5 | 10 | **Midterm Exam I**  **(15)** |
| Introduction to Classes and Objects (Classes, Objects, Instance variables and instance methods, Constructors) | Do |  | 5 | 5 |
| Inheritance and Polymorphism in OOP (super class, sub class, multiple-level inheritance, late binding) | Do | **CO2** |  | 10 | 10 | **Midterm Exam II**  **(17)** |
| Abstract Class and Interfaces (differences, applicability and implementation) | Do |  | 7 | 7 |
| Exception Handling in OOP and  File handling using Text and Binary I/O | Do | **CO3** |  | 8 | 8 | **Final Exam**  **(20)** |
| Implementation of Generics and GUI, Multi-threaded Programming, JDBC and other advanced topics | Do |  | 12 | 12 |

**Lab Exercises**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Experiment** | **Teaching-Learning Method** | **CO** | **Marks of Cognitive Level** | **Mark of Psychomotor Level** | | **Mark of Affective Level** | **Mark of COs** |
| C3 | P2 | P3 | A2 |  |
| Java Basics of Elementary Programming, Conditional Statements | Lab Experiment and Result Analysis and Discussion with Instructor, Post-Lab Report | CO4 |  |  |  |  |  |
| Looping, Nested Looping, Arrays | Do | CO4 |  |  |  |  |  |
| Java Methods and library functions | Do | CO4 |  |  |  |  |  |
| Designing and Implementing simple Classes and Objects, Arrays of Objects etc. | Do | CO4 |  |  |  |  |  |
| Lab Mid (Exam) | Individual Exam | CO4 | 1 | 1 | 2 | 1 | 5 |
| Implementing associations of Classes | Do | CO4 |  |  |  |  |  |
| Designing and Implementing Inheritance and Polymorphism | Do | CO4 |  |  |  |  |  |
| Designing and Implementing Abstract Class and Interfaces | Do | CO4 |  |  |  |  |  |
| Understanding and Implementing Exceptions and File management | Do | CO4 |  |  |  |  |  |
| Lab Exercises |  | CO4 | 4 | 4 | 4 | 0 | 12 |
| Lab Final (Exam) | Individual Exam | CO4 | 1 | 1 | 2 | 1 | 5 |
| **Total** |  |  | **6** | **6** | **8** | **2** | **22** |

**Mini Project**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Mini Project** | **Teaching-Learning Method** | **CO** | **Mark of Cognitive Levels** | | **Mark of Psychomotor Levels** | | **Mark of Affective Levels** | **Mark of COs** |
| C3 | C4 | P2 | P3 | A2 |  |
| Mini Project including Report and Presentation | Group-based moderately complex Project with report writing, and oral/poster presentation | CO4 | **3** | **2** | **2** | **2** | **2** | **11** |

**Overall Assessment Scheme**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **COs** | | | | **Assessment Area Mark** |
| **Assessment Area** | **CO1** | **CO2** | **CO3** | **CO4** |  |
| Class Participation | 1.44 | 1.63 | 1.93 |  | 5 |
| Class Test/Quizzes | 2.88 | 3.26 | 3.86 |  | 10 |
| Midterm Exam - I | 15.00 |  |  |  | 15 |
| Midterm Exam -II |  | 17.00 |  |  | 17 |
| Final Exam |  |  | 20.00 |  | 20 |
| Laboratory Experiments, Exam, and Lab Project |  |  |  | 33.00 | 33 |
| **Total Mark** | **19.3** | **21.9** | **25.8** | **33.0** | **100** |

**Teaching Materials/Equipment**

**Text Book:**

Follow course site

**Software/Tools:**

Follow course site

**Grading System**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Marks (%)** | **Letter Grade** | **Grade Point** | **Marks (%)** | **Letter Grade** | **Grade Point** |
| 97-100 | A+ | 4.00 | 73-76 | C+ | 2.30 |
| 90-96 | A | 4.00 | 70-72 | C | 2.00 |
| 87-89 | A- | 3.70 | 67-69 | C- | 1.70 |
| 83-86 | B+ | 3.30 | 63-66 | D+ | 1.30 |
| 80-82 | B | 3.00 | 60-62 | D | 1.00 |
| 77-79 | B- | 2.70 | Below 60 | F | 0.00 |

**Exam Dates**

|  |  |  |  |
| --- | --- | --- | --- |
| **Section** | **Term I** | **Term II** | **Final** |
| 5 | 16 October | 11 November | 11 December |

**Academic Code of Conduct**

**Academic Integrity:**

Any form of cheating, plagiarism, and personification, falsification of a document as well as any other form of dishonest behavior related to obtaining academic gain or the avoidance of evaluative exercises committed by a student is an academic offence under the Academic Code of Conduct and **may lead to severe penalties as decided by the Disciplinary Committee of the university.**

**Special Instructions:**

* Students are expected to attend all classes and examinations. A student MUST have at least 80% class attendance to sit for the final exam.
* Students will not be allowed to enter into the classroom after 10 minutes of the starting time.
* For plagiarism, the grade will automatically become zero for that exam/assignment.
* Normally there will be **NO make-up exam**. However, in case of **severe illness, death of any family member, any family emergency, or any humanitarian ground**, if a student miss any exam, the student MUST get approval of makeup exam by written application to the Chairperson through the Course Instructor **within 48 hours** of the exam time. Proper supporting documents in favor of the reason of missing the exam have to be presented with the application.
* For **final exam**, there will be NO makeup exam. However, in case of **severe illness, death of any family member, any family emergency, or any humanitarian ground**, if a student miss the final exam, the student MUST get approval of **Incomplete Grade** by written application to the Chairperson through the Course Instructor **within 48 hours** of the final exam time. Proper supporting documents in favor of the reason of missing the final exam have to be presented with the application. **It is the responsibility of the student to arrange an Incomplete Exam within the deadline mentioned in the Academic Calendar in consultation with the Course Instructor**.
* All mobile phones MUST be turned to silent mode during class and exam period.
* There is **zero tolerance for cheating** in exam. Students caught with cheat sheets in their possession, whether used or not; writing on the palm of hand, back of calculators, chairs or nearby walls; copying from cheat sheets or other cheat sources; copying from other examinee, etc. would be treated as cheating in the exam hall. The only penalty for cheating is **expulsion for several semesters as decided by the Disciplinary Committee of the university**.