



UNITED INTERNATIONAL UNIVERSITY

Department of Computer Science and Engineering (CSE) Course Syllabus

Course Title	Object Oriented Programming						
Course Code	CSE 1115						
Trimester and Year	Spring 2026						
Pre-requisites	CSE 1111 Structured Programming Language						
Credit Hours	3.0						
Section	C, E						
Class Hours	Sat-Tue 11:11 AM to 12:30 PM, Sun-Wed 08:30 AM to 09:50 AM						
Instructor's Name	Ashraful Islam Paran						
Email	paran@cse.uiu.ac.bd						
Office							
Counselling Hours	Will be updated in eLMS						
Text Book	Java The Complete Reference, Herbert Schildt						
Reference	1. Java: How to Program, 9th Edition (Deitel) 2. Java Programming By ANM Bazlur Rahman 3. https://codingbat.com/java						
Course Contents (approved by UGC)	Object oriented fundamentals, Java Application, Java applets, Methods, Arrays, String & characters, Graphics & java2D, Basic graphical user interface components, Multithreading, Multimedia, Files & streams, JDBC, Servlets, RMI, Networking, Java beans.						
Course Outcomes (COs)							
CO	Statement	Bloom's Domain	Program Outcome	Knowledge Profile	Complex Problem	Engineering Activities	
CO1	Understand the fundamental concepts and features of Object-Oriented Programming and use these to write programs for solving computational problems.	C	A Engineering Knowledge	K3 – Engineering fundamentals	P1 – Depth of Knowledge	-	

CO2	Understand the core concepts of GUI programming, File IO, Collections framework and	C	B Problem Analysis			-	
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	use these to solve programming problems.					
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Teaching Methods	Lecture, Case Studies, Project Developments.		
CO with Assessment Methods			
	CO	Assessment Method	(%)
	-	Attendance	5
	-	Assignments	5
	-	Evaluations (Best 3 out of 4)	20
	CO1	Midterm exam	30
	CO1, CO2	Final exam	40

Mapping of COs and Program outcomes											
COs	Program Outcomes (POs)										PO l
	PO a	PO b	PO c	PO d	PO e	PO f	PO g	PO h	PO i	PO j	
CO1	X										PO k
CO2		X									

Lecture Outline

Class	Topics/Assignments	COs	Reading Material	Lecture Outcomes/Activities
1	Introduction, Review of Programming, programming language, Motivation to use OOP	-	Slide	1. What Programming is? 2. Describe different types of programming. 3. Differentiate between Programming and Programming Language.
2	Java basics (Why Java, Application Class, Main method, identifier, data type, operator), From C to Java	CO1		1. What is Application class 2. Describe rules of java identifier. 3. Develop basic Hello World program.

3	Java Basics (control statement, array), Some Concepts: Scope of variable, ref variable, pass by value/reference, garbage collection	CO1	Ch 3, 4, 5, 6	<ol style="list-style-type: none"> 1. Describe data type, operators, control statement. 2. Define what array is and why we use array. 3. Develop simple program using different types of data, operator and control statement. 4. Differentiate between normal and reference variable. 5. Explain Scope of a variable.
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				6. Describe the effect of pass-by-value and pass-by-reference
4	Class and Object (Constructor, Initialization block, this keyword, default value, member of class, create object and access member)	CO1	Ch 6, 7	<ol style="list-style-type: none"> 1. Describe what class and object are. 2. Describe who the members of a class are. 3. Able to create class and object and access members.
5	Class and Object (Constructor, Initialization block, this keyword, default value, member of class, create object and access member)	CO1	Ch 6, 7	<ol style="list-style-type: none"> 1. Describe what class and object are. 2. Describe who the members of a class are. 3. Able to create class and object and access members.
6	Assessment (CT1). Package, access modifier.	CO1	Ch 7, 9	<ol style="list-style-type: none"> 1. Describe what is accessible from a specific point in regards to access modifier & package. 2. Describe how to use package and what the benefit of library is.
7	OOP Feature: Encapsulation (getter/setter), Method overloading (constructor overloading)	CO1	Ch 8	<ol style="list-style-type: none"> 1. Explain what encapsulation and overloading are and where to use these features. 2. Describe importance of encapsulation and overloading. 3. Able to develop code using encapsulation and overloading.

8	OOP Feature: Inheritance, this and super keyword, Object Class.	CO1	Ch 8	<ol style="list-style-type: none"> 1. Explain what inheritance is. 2. Describe what get inherited to child class and what can't be inherited. Get familiar with Object class and some of its method. 3.
9	OOP Feature: Method Overriding, override equals() and toString() method.	CO1	Ch 7	<ol style="list-style-type: none"> 1. Explain what method overriding is and where to use this feature. 2. Describe importance of method overriding 3. Able to develop code using overriding.
10	Assessment (CT2). Static & Final keyword	CO1	Ch 8	<ol style="list-style-type: none"> 1. Describe what is static and final variable and method.
11	SubClass Polymorphism, Benefit of Polymorphism	CO1	Ch 8	<ol style="list-style-type: none"> 1. Explain the concepts of subclass polymorphism. 2. Use it real scenarios.

12	Review			
	MIDTERM EXAM			
13	Abstraction, Abstract Class, abstract method	CO1	Ch 8	<ol style="list-style-type: none"> 1. Explain what abstraction is & how to achieve abstraction.
14	Interface- variables, methods, abstract class vs. interface	CO1	Ch 8	<ol style="list-style-type: none"> 1. Explain what interface is & how to declare an interface. 2. How can we use interface to achieve inheritance relationship.
15	Exception – try/catch/finally, nested try/catch, throw vs. throws, method stack	CO1	Ch 10	<ol style="list-style-type: none"> 1. Explain what Exception is. 2. Explain how to handle exception using try/catch block. 3. Explain how to throw an exception.
16	Assessment (CT3). Checked/unchecked exception. User Defined Exception	CO1	Ch 10	<ol style="list-style-type: none"> 1. Differentiate between checked and unchecked exception. 2. Can create and use user defined exception.
17	GUI Basic – Components, Container, Layout	CO2	Ch 31-33	<ol style="list-style-type: none"> 1. Explain different components of GUI. 2. Create GUI application using different Layout and components.

18	GUI Event Handling- source, listener, event object. Steps to handle event. Handle multiple events	CO2	Ch 24-26	<ol style="list-style-type: none"> 1. Explain and apply the event handling process. 2. Develop GUI application involving multiple event handling.
19	IO- Streams, Buffering, File read	CO2	Ch 20	<ol style="list-style-type: none"> 1. Explain the IO model, buffering. Able 2. to develop application involve reading from file.
20	Assessment (CT4). File write	CO2	Ch 20	<ol style="list-style-type: none"> 1. Able to develop application involve writing to file.
21	Collections- framework, ArrayList	CO2	Ch 18	<ol style="list-style-type: none"> 1. Explain the components of Collection framework. 2. Able to use the already defined Collection classes. 3. Able to create ArrayList of objects.
22	Comparable, Comparator, ArrayList sorting	CO2	Ch 18	<ol style="list-style-type: none"> 1. Able to use Comparable, Comparator to compare the items in a Collection. 2. Able to sort an ArrayList of objects.
23	Thread	CO2	Ch 18	<ol style="list-style-type: none"> 1. Able to create thread objects and do tasks with parallel threads.
24	Review			

**** Class Assessment schedules can be changed later with convenience of everyone**

Appendix 1: Assessment Methods

Assessment Types	Marks
Attendance	5%
Assignments	5%
Class Tests	20%
Mid Term	30%
Final Exam	40%

Appendix 2: Grading Policy

Letter Grade	Marks %	Grade Point	Letter Grade	Marks%	Grade Point
A (Plain)	90-100	4.00	C+ (Plus)	70-73	2.33
A- (Minus)	86-89	3.67	C (Plain)	66-69	2.00
B+ (Plus)	82-85	3.33	C- (Minus)	62-65	1.67
B (Plain)	78-81	3.00	D+ (Plus)	58-61	1.33
B- (Minus)	74-77	2.67	D (Plain)	55-57	1.00
			F (Fail)	<55	0.00

Appendix-3: Program outcomes

POs	Program Outcomes
P01	An ability to apply knowledge of mathematics, science, and engineering
P02	An ability to identify, formulate, and solve engineering problems
P03	An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
P04	An ability to design and conduct experiments, as well as to analyze and interpret data
P05	An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice
P06	The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
P07	A knowledge of contemporary issues
P08	An understanding of professional and ethical responsibility
P09	An ability to function on multidisciplinary teams
P010	An ability to communicate effectively
P011	Project Management and Finance
P012	A recognition of the need for, and an ability to engage in life-long learning