Addis Ababa Science and Technology University						
1	College: Electrical and Mechanical Engineering			Department: Software Engineering		
2	Course Name	Object Oriented Programming				
	Course Code:	SWEG3101				
3	Synopsis:	The goal of the course is to introduces object-oriented programming (OOP) using the Java programming language. Students will learn how to program in Java and using OOP principles:- classes and objects, encapsulation, polymorphism, inheritance; exception handling; introduction to GUI design concepts, introduction to Event handling; Special importance will be given to the object-oriented nature with Hands-on labs and exercises.				
4	Name(s) of Academic Staff:	Merid Nigussie and Abdi M.				
5	Semester and Year offered:	Semester :	I	Year:	3	
6	Credit Hour:	3				
7	Prerequisite/ Co-requisite: (if any)	Fundamental Programming II				

8 Course Learning Outcome (CLO): At the end of the course the student will be able to do:

CLO1	State object-oriented programming principles versus Procedural programming
CLO2	Create, compile, and Run a Java Programming Basics and Classes and Objects
CLO3	Use and practice inheritance, polymorphism and exception handling as implemented in Java
CLO4	Create event-driven GUI containers and components using java to design and illustrate Object Oriented Programming.
CLO5	
CLO6	

9 Mapping of the course Learning Outcomes to the program Learning Outcomes, Teaching Methods and Assessment:

Course Learning Outcomes (CLO)	Program Learning Outcomes (PO)												Teaching Methods				Assessment				
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	L	T	P	O	Test	Quiz	Assignment	Project	Final
CLO1		√															√		√		√
CLO2	√																√	√	√		
CLO3			√																	√	√
CLO4				√																	√

	CLO5																				
	CLO6																				
	Indicate the relevancy between the CLO and PO by ticking "√"on the appropriate relevant box																				
10	Transferable Skills (if applicable) (Skills learned in the course of study which can be useful and utilized in other settings)																				
	1																				
	2																				
	3…etc.																				

11	Distribution of Student Learning Time (SLT)								
	Course Content Outline	CLO	Teaching and Learning Activities						Total (SLT)
			Guided learning (F2F)				Guided Learning(NF2F)	Independent Learning (NF2F)	
			L	T	P	O			
	Chapter 1: **Introduction to Object Oriented Programming** 1.1. Features of Object-Oriented Programming	CLO1							
	1.2. Object-Oriented Programming vs. Procedural programming	CLO2							
	1.3. Object-Oriented Programming Languages	CLO1							
	1.4. Introduction to Java Programming language								
			4		**3**			**6**	**12**
	Chapter 2: **Basics of Java and control structures** 2.1. Basics of Java Programming	CLO2							
	2.2. Conditional statements	CLO2							
	2.3. Arrays and array lists	CLO2							
	2.4. Core Classes of Java	CLO3							
			4		**9**			**8**	**21**
	Chapter 3: **Classes and Objects** 3.1. Defining Classes	CLO3							
	3.2. Access Control (Private, protected, public)	CLO4							
	3.3. Working with Objects	CLO3							

	3.4. Constructors	CLO3							
			6		6			8	20
	Chapter 4: **Inheritance** 4.1. Types of inheritance	CLO2							
	4.2. Derived Classes and Abstract Classes	CLO4							
	4.3 Nesting Classes	CLO3							
			4		**6**			**8**	**18**
	Chapter 5: **Polymorphism** 5.1 Methods and Properties	CLO2							
	5.2 Interfaces	CLO3							
	5.3. Method overloading and Overriding	CLO3							
	5.4. Static and Dynamic binding	CLO4							
			4		**6**			**8**	**18**
	Chapter 6: **Exception Handling** 6.1. Introduction to Exceptions	CLO2							
	6.2 Types of Exception	CLO3							
	6.3 Try-catch clause	CLO4							
	6.4. Exception handling Examples								
			4		**6**			**8**	**18**
	Chapter 7: **Introduction to Graphical user interface in java**	CLO2							
	7.1. Java application	CLO3							
	7.2. GUI-components	CLO4							
	7.3. Layout management	CLO2							
	7.4. Event Handling in java	CLO4							
			2		**3**			**4**	**9**
	Total		**28**		**39**			**50**	**117**

Assessment

Continuous Assessment		Percentage Total-50(%)	F2F	NF2F	SLT
1	Tests	15%	√		2
2	Quiz	5%	√		1
3	Project	20%		√	4
4	Assignments	10		√	1
				Total	8

	Final Exam	Percentage 50 (%)	F2F	NF2F		SLT
	Final Exam			√		
	Grand Total SLT					128
	L = Lecture, T = Tutorial, P = Practical, O = Others, F2F = Face to Face, NF2F = Non Face to Face Note: indicates the CLO based on the CLO's numbering in item 9.					

	Special requirements and resources to deliver the course	1	Software
		2	Computer Lab

12	Text book	1	Absolute Java, 6th Edition, Walter Savitch, 2016
13	References:	2	Paul Deitel & Harvey Deitel: Java How to Program, 11th Edition, Prentice-Hall, 2017
		3	Cay S. Horstmann: Core Java Volume I - Fundamentals, 11th Edition, Prentice Hall, 2019