هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

2023
TP-153

Course Specification

(Bachelor)

Course Title: Object Oriented Programming	
Course Code: 501323-3	
Program: Bachelor of Computer Science	
Department: Department of Computer Science	
College: College of Computers and Information Technology	
Institution: Taif University	
Version: 1	
Last Revision Date: 01-02-2024	

Table of Contents

A. General information about the course:

1. Course Identification

1. Credit hours: (3)					
2. Course type					
A.	☐ University	☒ College	☐ Department	☐Track	☐Others
B.	☒ Required		☐Elective		
3. Level/year at which this course is offered: (5/3rd Year)					
4. Course general Description:					
This course provides Object-oriented programming paradigm, focusing on core concepts like Classes, Objects, Encapsulation, Inheritance, Polymorphism, etc., by using an object-oriented language. It introduces also UML Class Modeling tools to design and implement object-oriented applications.					
5. Pre-requirements for this course (if any):					
501222-3 (Computer Programming 2)					
6. Pre-requirements for this course (if any):					
7. Course Main Objective(s):					
Students at the end of this course are able: •Justify the philosophy of object-oriented design and the concepts of class, object, encapsulation, abstraction, inheritance, and polymorphism. •Describe how the class mechanism supports encapsulation and information hiding. •Design, implement, test, and debug simple programs in an object-oriented programming language.					

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	3	100%
2	E-learning		
3	Hybrid • Traditional classroom • E-learning		
4	Distance learning		

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	**Lectures**	45
2.	**Laboratory/Studio**	30
3.	**Field**	
4.	**Tutorial**	
5.	**Others (specify)**	
Total		75

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	**Knowledge and understanding**			
1.1	Understand Object Oriented Programming (OOP) paradigm	K1	Lecture Labs Project	Direct Assessment Tool Written Exams Assignments Quizzes Project Indirect Assessment Tool Course Exit Survey
1.2	Understand UML Class Presentation for OOP applications	K1	Lecture Labs Project	Direct Assessment Tool Written Exams Assignments Quizzes Project Indirect Assessment Tool Course Exit Survey
2.0	**Skills**			
2.1	Use OOP features and tools to design applications	S2	Lecture Labs Project	Direct Assessment Tool Written Exams Assignments Quizzes Project Indirect Assessment Tool Course Exit Survey

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
2.2	Implement object-oriented applications	S2	Lecture Labs Project	Direct Assessment Tool Written Exams Assignments Quizzes Project Indirect Assessment Tool Course Exit Survey
3.0	**Values, autonomy, and responsibility**			
3.1				

C. Course Content

No	List of Topics	Contact Hours
1.	Course overview, policies, Basic concepts of OOP	**5**
2.	Introduction to Java Programming	**10**
3.	OOP Fundamentals: Classes, Objects, states , Methods , Encapsulation and UML Class Presentation	**5**
4.	OOP Features: Driver class, Access modifier, Constructors, Instantiation, Message Passing, etc.	**5**
5.	Composition Concept : Reuse of code by modeling UML has-a composition's relation	**10**
6.	Classes and Objects Deeper Look - Part 1 : Static Class Members, Static import, Math static methods examples	**5**
7.	Classes and Objects Deeper Look - Part 2 : Access modifier & Packages and Garbage	**5**
8.	Inheritance Concept : Reuse of code by modeling UML is-a extending's relation	**5**
9.	Inheritance Deeper Look: Method overriding, final Methods and final Classes, Abstract Classes and Methods, Polymorphism	**5**
10.	Abstract Classes and Methods	**5**
11.	Polymorphism: Operator *instanceof* and *DownCasting* by using Array	**5**
12.	Exception Handling	**10**
Total		**75**

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	HomeWorks /Student Participation-Attendance	Every Week	5%
2.	Project	Week 3 →14	15%
3.	Quizzes	Week 4 & 12	10%
4.	Final Labs Exam	Week 7	10%
5.	Mid-Term	Week 15	20%
6.	Final Examination	Week 16	40%

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.).

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	Java How to Program, by Deitel, P., 9th Edition Prentice Hall. ISBN-13: 9780132575669
Supportive References	• Introduction to Java Programming, Comprehensive Version by Y. Daniel Liang Publisher: Prentice Hall; 10th edition (January 6, 2014). ISBN-10: 0133761312 ISBN-13: 978-0133761313 • Java: An Introduction to Problem Solving and Programming, (6 Th Edition) byWalter Savitch Building Java Programs (3rd Edition) by S. Reges & M. Stepp Publisher, Pearson 2013. ISBN-13: 978-0133360905
Electronic Materials	• Introduction to Programming using Java by David Eck. (2011). Online edition. Introduction to Programming in Java by R. Sedgewick & K. Wayne. Online edition
Other Learning Materials	-

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	• A Lecture room appropriate for maximum 25 students with a personal computer, a data show and a smart board. • A Lab room appropriate for maximum 15 students with a personal computer, a data show and a smart board.
Technology equipment (projector, smart board, software)	Lab materials and required software
Other equipment (depending on the nature of the specialty)	

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students	Students' surveys and Student's course evaluation
Effectiveness of Students assessment	Course Coordinator	deficiencies based on the student Evaluation, faculty input, course file, and program assessment
Quality of learning resources	Curriculum Committee	• Review CAF (Course assessment file) • Alumni surveys. Periodic exchange and remarking of tests or a sample of assignments with staff at another
The extent to which CLOs have been achieved		
Other		

Assessors (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	CS council
REFERENCE NO.	Meeting #11
DATE	07/03/2024

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