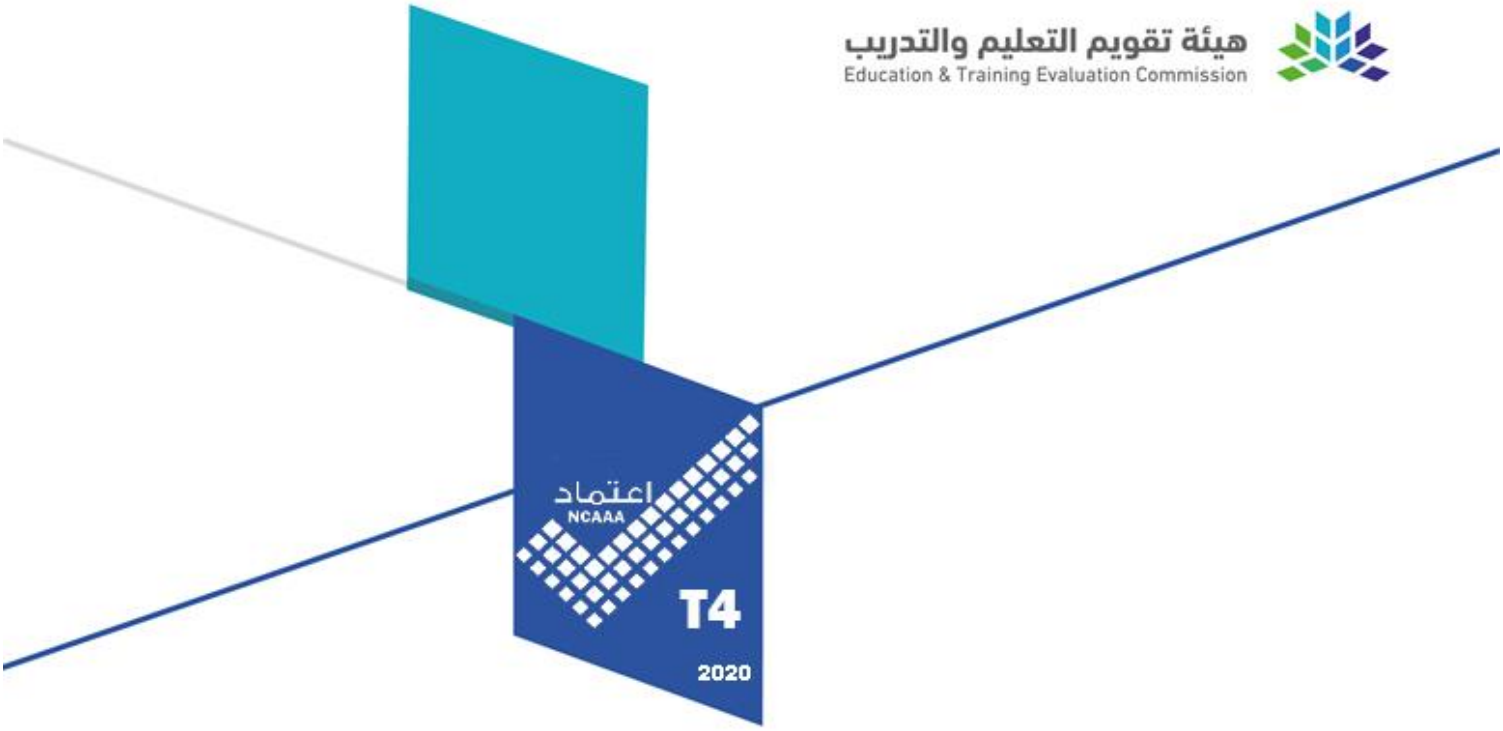
هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission



Course Specifications

Course Title:	Programming Paradigms
Course Code:	**313CSS-3**
Program:	BSc in Computer Science
Department:	Computer Science
College:	Computer Science and Information Systems
Institution:	Najran University

Table of Contents

A. Course Identification **3**

6. Mode of Instruction (mark all that apply) 3

B. Course Objectives and Learning Outcomes **3**

1. Course Description 3

2. Course Main Objective 3

3. Course Learning Outcomes 4

C. Course Content **4**

D. Teaching and Assessment **5**

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods 5

2. Assessment Tasks for Students 5

E. Student Academic Counseling and Support **6**

F. Learning Resources and Facilities **6**

1.Learning Resources 6

2. Facilities Required 6

G. Course Quality Evaluation **7**

H. Specification Approval Data **7**

A. Course Identification

1. Credit hours:	3(3, 4, 1)
2. Course type	
a.	University ☐ College ☐ Department ☒ Others ☐
b.	Required ☒ Elective ☐
3. Level/year at which this course is offered:	Year 4/Level-9
4. Pre-requisites for this course (if any)**:**	113CSS-4
5. Co-requisites for this course (if any)**:**	NA

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**	50	100
2	**Blended**		
3	**E-learning**		
4	**Distance learning**		
5	**Other**		

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	**Lecture**	20
2	**Laboratory/Studio**	20
3	**Tutorial**	10
4	**Others** (specify)	0
	Total	**50**

B. Course Objectives and Learning Outcomes

1. Course Description

Study of programming languages paradigms (imperative, functional, object oriented, … etc), Language evaluation criteria, evolution of major programming languages, and the main concepts of programming languages (types, expressions, control statements, subprograms, … etc). with a particular focus on the differences between the programming languages specially the modern languages (C++ and Java, Python and C#)

2. Course Main Objective

Expose students to the main programming paradigms, concepts, and languages to make them able to compare between different languages and evaluate them.

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	**Knowledge and Understanding**	
1.1	Describe the basics of functional programming, object oriented programming, logic programming paradigms with proper examples.	K_1
1.2	Discuss the scope and memory management concepts of various programming languages	K_1
1.3	Distinguish among different types of programming language paradigms	K_1, K_2
1...		
2	**Skills :**	
2.1	Analyze the syntactical differences of commonly used programming languages	S_1
2.2	Integrate main concepts of object oriented programming	S_2, S_4
2.3	Propose appropriate solutions for real-life problems with specific programming language	S_1, S_2, S_5
3	**Values:**	
3.1		
3.2		
3.3		
3...		

C. Course Content

No	List of Topics	Contact Hours
1	Introduction to programming language	3
2	Language evaluation criteria	3
3	Evolution of major programming languages	7
4	Data types	7
5	Expressions	3
6	Control statements	3
7	Iteration statements	3
8	Subprograms	7
9	Object oriented programming languages	7
10	Introduction to Functional Programming Languages –	4
11	Logic Programming – Introduction, Overview of Logic Programming	3
Total		**50**

D. Teaching and Assessment

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	**Knowledge and Understanding**		
1.1	Describe the basics of functional programming, object oriented programming, logic programming paradigms with proper examples.	• Lectures • Questions during the lectures to spark student's curiosity.	• Quizzes • Midterm exam • Final exam
1.2	Discuss the scope and memory management concepts of various programming languages	• Lectures • Questions during the lectures to spark student's curiosity. • Group discussion	• Quizzes • Midterm exam • Final exam
…	Distinguish among different types of programming language paradigms	• Lectures • Questions during the lectures to spark student's curiosity. • Group discussion • Group exercises	• Quizzes • Midterm exam • Final exam
2.0	**Skills**		
2.1	Analyze the syntactical differences of commonly used programming languages	• Lectures • Group exercises • Group discussions	• Quizzes • Midterm exam • Final exam
2.2	Integrate main concepts of object oriented programming	• Lectures • Group exercises • Group discussions	• Midterm exam • Final exam
2.3	Propose appropriate solutions for real-life problems with specific programming language	• Lectures • Group exercises • Group discussions	• Quizzes • Midterm exam • Final exam
3.0	**Values**		
3.1			
3.2			
…			

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Quizzes	3rd	10%
2	Assignments or mini project (presentation)	4th	10%
3	Midterm Exam	6th	20%

#	Assessment task*	Week Due	Percentage of Total Assessment Score
4	Lab project	10th	10%
5	Final Lab Exam	11th	10%
6	Final Exam	12 or 13th	40%

*Assessment task (i.e., written test, oral test, oral presentation, group project, essay, etc.)

E. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice :

The following arrangements for student consultations and academic advice are available:

- Office hours: 10 weekly hours.
- Academic advising: 4 weekly hours

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	Robert W. Sebesta, Concept of Programming Languages, Pearson Education, 12th Edition, 2019
Essential References Materials	- Saroj Kaushik, Logic and Prolog Programming, New Age International. - Mark Lutz and David Ascher, Learning Python, Oâ€™REILLY and Associates, Latest Edition. - Anders Hejlsberg, Mads Torgersen, Scott Wiltamuth and Peter Golde, The C# Programming Language, Microsoft .NET Development Series, Latest Edition. - Joshua Bloch, Effective Java: Programming Language Guide
Electronic Materials	NA
Other Learning Materials	NA

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	• Lecture rooms with 30 seats with a multimedia projector. • white board, personal computer, one table .
Technology Resources (AV, data show, Smart Board, software, etc.)	• Desktop/ Laptop computer • Projector system

Item	Resources
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	NA

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
At the end of the semester university always conducts an online faculty evaluation survey for all courses registered in the semester.	Students	Indirect
End of the semester a course survey is distributed to students to take their opinions about the CLOs.	Students	Direct
Recommendations given by the Curriculum committee at the end of the previous semester about the course. By encouraging the students to follow the tutorials and assignments of the offered course	Instructor	Direct
Peer consultation on teaching	Faculty	Direct

Evaluation areas (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)
Evaluators (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)
Assessment Methods (Direct, Indirect)

H. Specification Approval Data

Council / Committee	Computer Science Departmental Council
Reference No.	14440203-0185-00002
Date	1st Sep, 2022