Course Specification
(Bachelor)

Course Title:	Programming Principles
Course Code:	101CSC-3
Program:	Deanship of Preparatory Year “Computer and Engineering Tracks"
Department:	Computer Skills
College:	Deanship of Preparatory Year
Institution:	Najran University
Version:	2
Last Revision Date:	08/09/2024

Table of Contents

A. General information about the course:

1. Course Identification

1. Credit hours: (.....)					
3 (2 , 2) (Theory , Lab)					
2. Course type					
A.	☐University	☐College	☐Department	☒ Track	☐Others
B.	☒ Required		☐Elective		
3. Level/year at which this course is offered: (Level 2)					
4. Course General Description:					
The course deals with the principles of computational thinking, solving, and analyzing problems, and principle of designing and evaluating algorithm.					
5. Pre-requirements for this course (if any)**:**					
6. Co-requisites for this course (if any)**:**					
7. Course Main Objective(s):					
The course aims to teach students the basic knowledge and skills to solve problems using computational thinking and apply that by using a programming language.					

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	60	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**	30
2.	**Laboratory/Studio**	30
3.	**Field**	
4.	**Tutorial**	
5.	**Others (specify)**	
Total		60

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

Code	Course Learning Outcomes	Code of PLOs aligned with the program	Teaching Strategies	Assessment Methods
1.0	**Knowledge and understanding**			
1.1	Explain the essential principles and concepts of computational thinking in solving problems.		1-Interactive Lectures using PowerPoint slides and explaining the essential points in more detail with the help of whiteboard. 2-Encouraging the students to use the online links to know the concepts in detail. 3–Recall the topics discussed in the last lecture by asking questions to the students. 4–Motivating students to be active during class by asking questions regularly during the lecture. 5–Associating the topics in with the course learning outcomes (CLO)	Quiz, midterm and final exams
1.2	Describe the terms (data, Information, Cloud Computing, internet, and network)			Quiz, midterm and final exams
2.0	**Skills**			
2.1	Describe, and represent a sequence of steps and decisions (algorithms) needed to solve simple problems		Cooperative Learning, Inquiry-based instruction, class-discussion, problem-based learning Lab	Assignment, Mid and Final Exams, Labs, Project

Code	Course Learning Outcomes	Code of PLOs aligned with the program	Teaching Strategies	Assessment Methods
2.2	Write and implement basic programs using computational thinking concepts.		Cooperative Learning, Inquiry-based instruction, class-discussion, problem-based learning Lab	Labs, Project
3.0	**Values, autonomy, and responsibility**			
3.1	The ability to solve problems and write programs with collaboration and teamwork in mind.		Cooperative Learning, Course Project	Labs, Project
3.2				
...				

C. Course Content

No	List of Topics	Contact Hours
1.	An introduction to computational thinking	5
2.	Logic and algorithms thinking	5
3.	Problem solving and decomposition	5
4.	Pseudocode and flowchart	9
5.	Anticipating and Dealing with Errors	9
6.	Evaluating a Solution	9
7.	Introduction to Python Programming	9
8.	Project: applying all above concepts using Python	9
Total		**60**

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Quiz 1-2	5th and 10th week	%10
2.	Mid Term Exam	8th week	%25
3.	Lab Activities and Lab Project/Quiz	11th and 16th week	%10
4.	Final Lab Exam	17th week	%15
5.	Final Exam	18th or 19th week	%40
	Total		%100

*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	• Book: Computational Thinking: A Beginner's Guide to Problem-Solving and Programming. Author: Karl Beecher Publication Year: 2017
Supportive References	• Computational Thinking for the Modern Problem Solver. Textbook by David D. Riley and Kenny A. Hunt • Handouts and presentations prepared by department. Slides and recorded lectures on blackboard
Electronic Materials	Python programming language https://www.python.org/
Other Learning Materials	▪ Links provided by teachers. ▪ presentations prepared by department.

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Classrooms accommodate 23 students per class with advanced computers connected by internet.
Technology equipment (projector, smart board, software)	Data show, smart board, Microsoft Office 2019
Other equipment (depending on the nature of the specialty)	

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students, faculty, and peer review	Indirect (questionnaires and interviews)
Effectiveness of Students assessment	Faculty and student	Direct and indirect (exams, quizzes, lab works and questionnaires)
Quality of learning resources	Faculty, student, head of department	Written exam
The extent to which CLOs have been achieved	Faculty	Direct and indirect (exams, quizzes, lab works and questionnaires)
Other		

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

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	**COMPUTER SKILLS COUNCIL 461**
REFERENCE NO.	**14460305-0981-00001**
DATE	**09-09-2024**