هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

T-240
2023

Course Specification

هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

T-240
2023

Course Specification

Course Title:	Programming in Python
Course Code:	CS 0133
Program:	
Department:	Applied Sciences
College:	Applied College
Institution:	Imam Mohammad Ibn Saud Islamic University
Version:	2023
Last Revision Date:	August 1st, 2023

Table of Contents:

A. General information about the course:

Course Identification					
1. Credit hours:	3(2 theory, 2 lab)				
2. Course type					
a.	University ☐	College ☒	Department☐	Track☐	Others☐

b. Required ☒ Elective ☐	
3. Level/year at which this course is offered:	Third

4. Course general Description:

The Python programming course offers a comprehensive introduction to the Python programming language, catering to both beginners and those with prior programming experience. Throughout the course, participants delve into Python's syntax, data structures, and key concepts, enabling them to develop a strong grasp of the language.Students gain practical experience in implementing Python solutions for diverse scenarios, including data manipulation and analysis

5. Pre-requirements for this course (if any):

6. Co- requirements for this course (if any): None

7. Course Main Objective(s):

The main objectives of a Python programming course typically include:

1. Providing a comprehensive understanding of the Python programming language, including its syntax, data structures, and core concepts.
2. Equipping students with proficiency in object-oriented programming and best practices for writing efficient and maintainable code in Python.
3. Familiarizing students with popular Python libraries and frameworks for tasks such as data analysis, web development, and automation.
4. Cultivating the ability to solve real-world problems using Python, and encouraging creativity and critical thinking in designing and implementing Python solutions.

○

1. Teaching mode (mark all that apply)

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

2. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	18
2.	Laboratory/Studio	18
3.	Field	
4.	Tutorial	
5.	Others (Specify)	
	Total	36

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 the fundamentals of Python programming language, including data types, variables, control structures, and functions.	ع1، ع5	- Lecture. - Discussion. - Survey. - Discovery learning. - Self-education. - Developed lecture. - Brainstorming. - Web survey. - KWL chart. - Mind maps. - Concept maps.	- Traditional and online achievement tests. - Questions. - Assignments and assessments. - Presentations. - Discussion and debates. - Cognitive performance tests. - Achievement file.
1.2	Apply object-oriented programming concepts in Python, including classes, objects, inheritance, and polymorphism	ع1، ع5		
1.3	Utilize Python libraries and modules for data manipulation, analysis, and visualization.	ع1، ع5		
2.0	Skills			
2.1	Implement error handling and exceptions in Python to write robust and reliable code.	م1، م2، م7	- Demonstration. - Developed lecture. - Discovery learning. - Peer learning. - Self-education. - Discussion. - Web survey. - Brainstorming. - Co-learning. - Problem Solving. - Project. - Online discussion.	- Presentations. - Rating ladders. - Performance tests. - Production metrics. - Observation. - Projects. - Achievement file. - Peer assessment. - Self-calendar.
2.2	Develop and deploy Python applications for various real-world scenarios.	م1، م2، م7		
2.3	Demonstrate proficiency in using Python for tasks such as web scraping, automation, and working with APIs	م1، م2، م7		
2.4	Collaborate and work effectively in a team using Python for cooperative programming and project development.	م1، م2، م7		
3.0	Values, autonomy, and responsibility			
3.1	Cooperation, teamwork, and professional ethics.	ق1	- Demonstration. - Developed lecture. - Discovery learning. - Peer learning. - Self-education.	- Presentations. - Rating ladders. - Performance tests. - Production metrics.
3.2	Take responsibility for continuous learning and	ق٢		

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
	continuing personal development.		- Discussion. - Web survey. - Brainstorming. - Co-learning. - Problem Solving. - Project. - Online discussion.	- Observation. - Projects. - Achievement file. - Peer assessment. - Self-calendar.
3.3	Efficient and effective time management when applying acquired knowledge and skills.	ق٣		

C. Course Content

No	List of Topics	Contact Hours
1.	• Module 1 - Introduction to Python and computer programming	4
2.	• Module 2 - Data types, variables, basic input-output operations, basic operators	6
3.	• Module 3 - Boolean values, conditional execution, loops, lists and list processing, logical and bitwise operations	8
4.	• Module 4 - Functions, tuples, dictionaries, and data processing	6
5.	• Module 5 - Modules, Packages and PIP	6
6.	• Module 6 - Strings, String and List Methods, Exceptions	6
7.	• Module 7 - Object-Oriented Programming	6
Total		36

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (In week no)	Percentage of Total Assessment Score
1.	Quizzes	Continuous	15%
2.	Homework	Continuous	5%
3.	Midterm Exam	Week7	20%
4.	Practical Assessment and project	Continuous	30%
5.	Final Exam	Week12	30%

*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	PCAP - Programming Essentials in Python by Cisco Networking Academy. http://www.netacad.com
Supportive References	1- "Python Crash Course" by Eric Matthes 2- "Automate the Boring Stuff with Python" by Al Sweigart 3- Official Python Documentation and Tutorial 4- Online resources such as Python.org, RealPython, and Stack Overflow
Electronic Materials	○ Online resources will be provided during class lectures.
Other Learning Materials	N/A

2. Required Facilities and equipment

Items	Resources
Facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Classroom included: 1. A projector connected to a PC, preferably with Internet access. 2. A vertical sliding board. 3. An equipped computer lab with at least 25 seats.
Technology equipment (Projector, smart board, software, etc.)	Computing resources (Projector, data show, Smart Board, software: Win Dos- Win Server- Linux - Ubuntu, etc.).
Other equipment (Depending on the nature of the specialty)	N/A

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Student	1. Students feedback (collected through surveys) as per university policy/procedure. 2. Teacher's Course report.
Effectiveness of student's assessment	Faculty	1. Review of Course Reports.

Assessment Areas/Issues	Assessor	Assessment Methods
		2. Review of Student feedback.
Quality of learning resources	Student and Faculty	Indirect using course evaluation and faculty survey.
The extent to which CLOs have been achieved	Program Leaders	Continuous review of the course contents, teaching strategies and utilizing the best practices.
Other	N/A	N/A

Assessor (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)
Assessment Methods (Direct, Indirect)

G. Specification Approval Data

COUNCIL /COMMITTEE	
REFERENCE NO.	
DATE	