هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

اعتماد
NCAAA

2024
TP-153

Course Specification
(Bachelor)

Course Title: Object Oriented Programming 1	
Course Code: 284CIS-3	
Program: Programming and Database	
Department: Computer department	
College: Applied college	
Institution: Najran university	
Version: TP-153 2024	
Last Revision Date: 3 October 2024	

Table of Contents

A. General information about the course:

1. Course Identification

1. Credit hours: (3)

2 + 1

2. Course type

A.	☐ University	☐ College	☒ Department	☐ Track	Others
B.	☒ Required		☐ Elective		

3. Level/year at which this course is offered: (3th)

4. Course General Description:

This course is about object-oriented programming concepts using python programming language. It includes Modules and Packages, Exceptions, Strings, and concepts of Object-Oriented Programming which include class, object, property, method, encapsulation, inheritance, grammar vs class, superclass, subclass. This course is essential for obtaining the professional certificate PCAP (PCAP-31-03), and updated periodically according to the certificate exam.

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

138CIS-3

6. Co-requisites for this course (if any):

None

7. Course Main Objective(s):

This course is intended to:

- Provide students with a good understanding of concepts and terminology related to the OOP.
- Enable students to translate the real computing problems into an object-oriented solution.
- Develop the programming skills and experience needed to write object-oriented programs within the Python language.
- Enable students to communicate with others effectively to solve real computing Problems.

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	4 hours per week	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	Define the concepts related to the Object-oriented programming (OOP).	K2	Lecturers Labs	Exam Quiz Assignment
1.2	Describe the process of solving real computing problem in OOP	K3	Lecturers Labs	Exam Quiz Assignment
2.0	**Skills**			
2.1	Implement robust applications using Python class libraries.	S1	Lecturers Labs	Exam Quiz Assignment

Code	Course Learning Outcomes	Code of PLOs aligned with the program	Teaching Strategies	Assessment Methods
2.2	Develop OOP programs.	S1	Lecturers Labs	Exam Presentation
…				
3.0	**Values, autonomy, and responsibility**			
3.1	Demonstrate projects and assignments in teamwork for designing and developing SQL programs	V3	Project Small group report	Presentation
3.2				
…				

C. Course Content

No	List of Topics	Contact Hours
	Object-Oriented Programming (%30 of exam block #4)	
1.	**Employ class and object properties** • instance vs. class variables: declarations and initializations • the __dict__ property (objects vs. classes) • private components (instances vs. classes) • name mangling	7.5
2.	**Equip a class with methods** • declaring and using methods • the self parameter	4.5
3.	**Discover the class structure** • introspection and the hasattr() function (objects vs classes) properties: __name__, __module__ , __bases__	6
4.	**Build a class hierarchy using inheritance** • single and multiple inheritance • the isinstance() function • overriding • operators: • not is, is	7.5

	• polymorphism • overriding the __str__() method • diamonds	
5.	**Construct and initialize objects** • declaring and invoking constructors	3
	Miscellaneous (%22 of exam block #5)	0
6.	**Build complex lists using list comprehension** • list comprehensions: the if operator, nested comprehensions	3
7.	**Embed lambda functions into the code** • lambdas: defining and using lambdas • self-defined functions taking lambdas as arguments • functions: map(), filter()	6
8.	Mid Term Exam	1.5
9.	**Define and use closures** • closures: meaning and rationale • defining and using closures	6
10.	**Understand basic Input/Output terminology** • I/O modes • predefined streams • handles vs. streams text vs. binary modes	7.5
11.	**Perform Input/Output operations** • the open() function • the errno variable and its values • functions: close(), .read(), .write(), .readline(), readlines() • using bytearray as input/output buffer	7.5
Total		**60**

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Midterm exam	8	20%
2.	Homework's	From 4 to 11	10%
3.	Practical exam	15	20%
4.	Final exam	16	50%

*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	Python Essentials - Part 2 (Intermediate) Edube Interactive :: Python Essentials - Part 2
Supportive References	Steven F. Lott, Dusty Phillips, Python Object-Oriented Programming Fourth Edition, ISBN 978-1-80107-726-2, 2021
Electronic Materials	https://www.python.org/doc/
Other Learning Materials	

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Classroom with a suitable size for students
Technology equipment (projector, smart board, software)	Whiteboard/projector
Other equipment (depending on the nature of the specialty)	None

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Student	Direct: Questioners
Effectiveness of Students assessment	Teacher Audit and review committees	Direct: CW & HW Exercises and short quizzes Projects Mid and final paper exams.
Quality of learning resources	Teachers and course description committees	Indirect: Benchmarking Self-evaluation

Assessment Areas/Issues	Assessor	Assessment Methods
		External evaluation
The extent to which CLOs have been achieved	Teacher	Direct: Measuring the learning outcomes
Other		

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

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	
REFERENCE NO.	
DATE	