



Ministry of Higher Education and
Scientific Research - Iraq
University of Diyala
College of Engineering for Artificial
Intelligence Technology
Department of Cybersecurity Engineering



الملحق ٤: وصف المادة الدراسية

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	Object Oriented Programming		Module Delivery
Module Type	Core		☒ Theory ☒ Lecture ☐ Lab ☐ Tutorial ☐ Practical ☐ Seminar
Module Code	CSE 202		
ECTS Credits	5		
SWL (hr/sem)	125		
Module Level	2	Semester of Delivery	
Administering Department	Cybersecurity Eng.	College	College of Artificial Intelligence Engineering Technology
Module Leader	Hayder Namuq Talib	e-mail	haydernamuq@uodiyala.edu.iq
Module Leader's Acad. Title	Asst. Lect.	Module Leader's Qualification	MSc.
Module Tutor	Name (if available)	e-mail	E-mail
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date	14/05/2026	Version Number	1.0

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	CSE 102	Semester	2
Co-requisites module	None	Semester	



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Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Objectives أهداف المادة الدراسية	By the end of this module, students will be able to: 1. Understand the fundamental principles of object-oriented programming and software design. 2. Develop programs using classes, objects, and modular programming techniques. 3. Apply encapsulation, abstraction, inheritance, and polymorphism in software development. 4. Implement secure and maintainable programming practices using Python. 5. Handle exceptions, files, and program errors effectively. 6. Develop interactive applications using graphical user interface (GUI) concepts. 7. Apply object-oriented programming concepts to real-world computing applications.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Upon successful completion of this module, students should be able to: 1. Explain the concepts and advantages of object-oriented programming. 2. Design and implement classes and objects using Python. 3. Apply constructors, methods, and access control concepts. 4. Implement inheritance and polymorphism in software applications. 5. Analyze object relationships and modular software structures. 6. Apply exception handling and debugging techniques. 7. Develop applications involving file processing and external modules. 8. Create simple GUI-based interactive applications. 9. Build and present a small object-oriented software project.
Indicative Contents المحتويات الإرشادية	• Introduction to Programming and Python Fundamentals • Introduction to Object-Oriented Programming Concepts • Python Syntax, Variables, Data Types, and Operators • Control Statements and Functions • Classes, Objects, Constructors, and Methods • Encapsulation, Abstraction, and Access Control • Inheritance and Class Relationships • Polymorphism and Method Overriding • Exception Handling and Debugging Techniques • File Handling and Data Processing • Python Modules, Packages, and Libraries • Advanced OOP Concepts and Special Methods • Introduction to Multithreading Concepts • GUI Programming and Event Handling • Object-Oriented Project Development



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Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies	The module will be delivered using a combination of: • Interactive lectures and programming demonstrations. • Practical laboratory sessions and coding exercises. • Step-by-step software development activities. • Individual and group programming assignments. • Problem-solving and debugging exercises. • Mini-project development and presentations. • Continuous assessment through quizzes, labs, assignments, and examinations.
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Student Workload (SWL)

الحمل الدراسي للطلاب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطلاب خلال الفصل	78	Structured SWL (h/w) الحمل الدراسي المنتظم للطلاب أسبوعيا	5.2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطلاب خلال الفصل	47	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطلاب أسبوعيا	3.1
Total SWL (h/sem) الحمل الدراسي الكلي للطلاب خلال الفصل	125		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (5)	6 and 14	LO #1 to #9
	Assignments	2	10% (5)	4, 7 and 10	LO #1 - #9
	Class Work	2	10% (5)		
	Projects / Lab.	1	10%		
	Report				
Summative assessment	Midterm Exam	1 hr	10% (10)	9	LO #1 to #6
	Final Exam	3 hr	50% (50)	16	All
Total assessment			100% (100 Marks)		



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Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction to Programming and Python Fundamentals
Week 2	Python Syntax, Variables, Data Types, and Operators
Week 3	Control Statements and Functions
Week 4	Introduction to Object-Oriented Programming Concepts
Week 5	Classes, Objects, Constructors, and Methods
Week 6	Encapsulation, Abstraction, and Access Control
Week 7	Inheritance and Class Relationships
Week 8	Midterm Exam
Week 9	Polymorphism and Method Overriding
Week 10	Exception Handling and Debugging Techniques
Week 11	File Handling and Data Processing
Week 12	Python Modules, Packages, and Libraries
Week 13	Advanced OOP Concepts and Introduction to Multithreading
Week 14	GUI Programming and Event Handling
Week 15	Mini Project Presentation and Revision
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Python Environment Setup and Basic Programming
Week 2	Variables, Operators, and Data Type Exercises
Week 3	Control Statements and Function Implementation
Week 4	Simple OOP Exercises using Classes and Objects
Week 5	Constructors, Methods, and Object Interaction
Week 6	Encapsulation and Abstraction Exercises
Week 7	Inheritance and Class Hierarchies



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Week 8	Midterm Practical Assessment
Week 9	Polymorphism and Method Overriding Applications
Week 10	Exception Handling and Debugging Practice
Week 11	File Handling and Data Processing Applications
Week 12	Working with Python Modules and Packages
Week 13	Introduction to Multithreading Applications
Week 14	GUI Development using Tkinter and Event Handling
Week 15	Final Mini Project Demonstration

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	- Python Crash Course by Eric Matthes - Object-Oriented Programming in Python by Michael H. Goldwasser and David Letscher - Learning Python by Mark Lutz	No
Recommended Texts	- Python Programming: An Introduction to Computer Science by John Zelle - Head First Object-Oriented Analysis and Design by Brett McLaughlin, Gary Pollice, and David West - Fluent Python by Luciano Ramalho	No
Websites	Python Official Documentation W3Schools Python Tutorial Real Python Tutorials GeeksforGeeks Python Programming Python Tutor Visualization Tool	

Grading Scheme



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مخطط الدرجات				
Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	FX – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.