

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	Python Programming Language		Module Delivery
Module Type	C	☒ Theory ☐ Lecture ☒ Lab ☒ Tutorial ☐ Practical ☐ Seminar	
Module Code	AI209		
ECTS Credits	6		
SWL (hr/sem)	150		
Module Level	UGII		Semester of Delivery
Administering Department	AI	College	CIT
Module Leader	Omar Dhafer Madeeh	e-mail	omar.dhafer@uofallujah.edu.iq
Module Leader's Acad. Title	Asst. Professor	Module Leader's Qualification	Ph.D.
Module Tutor	Yasir Hadi Farhan	e-mail	Yasir.hadi@uofallujah.edu.iq
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Scientific Committee Approval Date	01/06/2023	Version Number	1.0

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module		Semester	
Co-requisites module		Semester	

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1. Introduce the principles of a higher-level programming language in python. 2. Analyze a problem statement to develop a mental model of objects necessary to create a software architecture 3. Utilize object-oriented programming to frame software architectures, with care towards separation of concerns and abstraction 4. Gain skills in designing, and programming software for reuse of code.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	• Explain the motivation for and development of python programming language. • Produce a set of use cases given a problem statement. • Produce class diagrams, object interaction diagrams and object state transition diagrams for a given problem. • Describe the essential features of an object-oriented programming language. • Produce and/or debug code fragments that illustrate principles of object-oriented software development. • Describe the principles for testing object-oriented software and derive sets of test data given a specification.
Indicative Contents المحتويات الإرشادية	✓ Structured programming ✓ Procedural programming ✓ Abstract data types (ADTs) ✓ Type of variable and range of applicable operations ✓ Use of classes in object-oriented programming

Learning and Teaching Strategies	
استراتيجيات التعلم والتعليم	
Strategies	There are different teaching and learning activities including lectures and laboratories. The concepts, process, and applications of data science will be discussed in lectures. Students will also learn computer programming knowledge and the skills of manipulating, processing, retrieving, storing, and plotting data. Students will develop small programs and learn different in laboratories.

Student Workload (SWL)			
الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem)	72	Unstructured SWL (h/w)	5

الحمل الدراسي غير المنتظم للطالب خلال الفصل	الحمل الدراسي غير المنتظم للطالب أسبوعيا	
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150	

Module Evaluation تقييم المادة الدراسية					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	All
	Assignments	2	5% (5)	4 and 12	All
	Projects / Lab.	1	15% (15)	Continuous	All
	Report	2	10% (10)	7 and 13	All
Summative assessment	Midterm Exam	2hr	10% (10)	7	All
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Installation of Python and an Integrated Development Environment (IDE)
Week 2	Python Fundamental: Introduction, Variables, Comments, Python Data Types
Week 3	Python Fundamental: Operators, Python Conditions and If statements, Python Loops,
Week 4	Python Fundamental: Functions: defining functions, parameters, and return values
Week 5	Lists, tuples, sets, and dictionaries
Week 6	Introduction to Class Fundamentals
Week 7	Python - Object Oriented Programming (objects, inheritance, polymorphism)
Week 8	Mid-term Exam
Week 9	Reading and writing files in Python
Week 10	Exception handling and error management
Week 11	Introduction to standard input/output and libraries
Week 12	Exploring key Python libraries (e.g., NumPy, pandas, matplotlib)
Week 13	Installing and using external libraries

Week 14	Introduction to databases (SQLite, MySQL, or PostgreSQL) Connecting Python to databases
Week 15	python Project

Delivery Plan (Weekly Lab. Syllabus) المناهج الاسبوعي للمختبر	
	Material Covered
Week 1	Installation of Python and an Integrated Development Environment (IDE)
Week 2	Python Fundamental: Introduction, Variables, Comments, Python Data Types
Week 3	Python Fundamental: Operators, Python Conditions and If statements, Python Loops,
Week 4	Python Fundamental: Functions: defining functions, parameters, and return values
Week 5	Lists, tuples, sets, and dictionaries
Week 6	Reading and writing files in Python
Week 7	Exception handling and error management

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	"Python Cookbook" by David Beazley and Brian K. Jones:	No
Recommended Texts		No
Websites	https://www.coursera.org	

Grading Scheme 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.