MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Introduction to Python**			**Module Delivery**	
Module Type	**Core**			☒**Theory** ☒**Lecture** ☐ **Lab** ☒ **Tutorial** ☐**Practical** ☒**Seminar**	
Module Code	**COM-224**				
ECTS Credits	5				
SWL (hr/sem)	**125**				
Module Level	2		**Semester of Delivery**	4	
Administering Department	com		**College**	cos	
Module Leader	Ali Hussein Fadil		**e-mail**	Ali.hussien@uobasrah.edu.iq	
Module Leader's Acad. Title			**Module Leader's Qualification**		
Module Tutor	Name (if available)		**e-mail**	E-mail	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	20/08/2024		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	**Introduction to Object Oriented Language**	**Semester**	1
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	Python Programming is intended for software engineers, systems analysts, program managers and user support personnel who wish to learn the Python programming language.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	The learning objectives of this course are: ▪ To understand why Python is a useful scripting language for developers. ▪ To learn how to design and program Python applications. ▪ To learn how to use lists, tuples, and dictionaries in Python programs. ▪ To learn how to identify Python object types. ▪ To learn how to use indexing and slicing to access data in Python programs. ▪ To define the structure and components of a Python program. ▪ To learn how to write loops and decision statements in Python. ▪ To learn how to write functions and pass arguments in Python. ▪ To learn how to build and package Python modules for reusability. ▪ To learn how to read and write files in Python. ▪ To learn how to design object-oriented programs with Python classes. ▪ To learn how to use class inheritance in Python for reusability. ▪ To learn how to use exception handling in Python applications for error handling.
Indicative Contents المحتويات الإرشادية	**Introduction to Programming in Python:** Introduction to Programming in Python: What Is Python? Features of Python, Python environment set up. [5 hrs.] **Download & Install Python:** Download your operating system-compatible Python Interpreter, install Python, customize Python shell, and write & execute Python programs using Interactive mode and script mode. Python PyCharm or IDE sets Python for PyCharm IDE, configures PyCharm IDE, and writes & executes Python programs. [5 hrs.] **Structure of a Python Program Basics of Programming in Python:** Input statement, output statement, variables, operators, numbers, Literals, strings, lists and tuples, dictionaries. [16 hrs.] **Conditionals, Loops, and Functions. Conditionals and Loops:** if statement, else Statement, elif Statement, while Statement, for Statement break Statement, continue Statement, pass Statement. Functions: Built-in Functions, User-defined functions: Defining a Function, Calling a Function, Various Function Arguments. [25 hrs.] **Files, Modules, and Introduction to Advanced Python. Files:** File Objects, File Built-in Methods, File Built-in Attributes, Standard Files, Command-line Arguments Modules: Modules and Files, Namespaces, Importing Modules, Importing Module Attributes, Module Built-in Functions, Packages. [20 hrs.]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	• The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials, and by considering types of simple experiments involving some sampling activities that are interesting to the students.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	28	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5.2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	71	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4.7
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**125**		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	3	10% (10)	2,6 and 9,11	LO #2, #6 and #9, #11
	Assignments	1	10% (10)	3,5 and 10,12	LO #3, #5 and #10, #12
	Home Works	2	10% (10)	2,5 and 8,11	LO #2, #5 and #8, #11
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #13
Summative assessment	**Midterm Exam**	2hr	10% (10)	8	LO #8
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction to Python programming and installation, why using Python, python connected environment type Python PyCharm or IDE, set Python for PyCharm IDE, libraries, Python code (print), experiment with example code.
Week 2	Data Types: Int, float, Boolean, string, and list; variables, expressions, statements, precedence of operators, comments.
Week 3	modules, functions--- function and its use, flow of execution, parameters, and arguments. data type, variable types, and experiment function, string type.
Week 4	CONTROL FLOW, LOOPS Conditionals: Boolean values and operators, conditional (if), alternative (if-else).
Week 5	CONTROL FLOW, chained conditional (if-elif-else).
Week 6	LOOPS Conditionals: Iteration: while, for, break, continue.
Week 7	**Mid Exam**
Week 8	FUNCTIONS, ARRAYS Fruitful functions: return values, parameters, local and global scope, and function composition.
Week 9	Recursion.
Week 10	Strings: string slices, immutability, string functions and methods, string module
Week 11	Python arrays, Access the Elements of an Array, array methods.
Week 12	LISTS, TUPLES, DICTIONARIES Lists: list operations, list slices, list methods, list loop
Week 13	Mutability, aliasing, cloning lists, list parameters, list comprehension;
Week 14	Tuples: tuple assignment, tuple as return value, tuple comprehension; Dictionaries: operations and methods, comprehension
Week 15	FILES, EXCEPTIONS: Files and exceptions: text files, reading and writing files.

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Introduction to Python programming and installation Python environment, PyCharm.
Week 2	Example of first Python code (print) code, string type.
Week 3	An example of Python data type and variables is a library of PyCharm
Week 4	Starting of Python project.
Week 5	Example of Python mathematic operations, List, and operation
Week 6	Example of Python list.
Week 7	More examples of list function
Week 8	Apply of python project 1.
Week 9	Example of Python Tubes
Week 10	Example of Python Tubes
Week 11	Example of Python function
Week 12	Apply of python project 2.
Week 13	Example of Conditional statements (if-else).
Week 14	Example of Loops (for, while, do-while).
Week 15	First Dissection of Python Project.

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Think Python: How to Think Like a Computer Scientist", Allen B. Downey 2nd edition, Updated for Python 3, Shroff/O 'Reilly Publishers, 2016.	
Recommended Texts	"Core Python Programming", W.Chun, Pearson, Kenneth A. Lambert, Cengage, Learning Python, Mark Lutz, Orielly.	
Websites	https://www.gcreddy.com/2021/05/python-programming-syllabus.html.	

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.