MODULE DESCRIPTOR FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية			
Module Title	Computer 2	**Module Delivery**	
Module Type	Basic	☒Theory	
Module Code	UOMU036245	☐Lecture ☒Lab	
ECTS Credits	3	☐Tutorial ☐Practical	
SWL (hr/sem)	75	☐Seminar	

Module Level	2	**Semester of Delivery**	2
Administering Department	Dept. of Biochemistry	**College**	College of Science
Module Leader		**e-mail**	
Module Leader's Acad. Title		**Module Leader's Qualification**	
Module Tutor		**e-mail**	
Peer Reviewer Name		**e-mail**	
Review Committee Approval Date		**Version Number**	1.0

RelationwithOtherModule sالعلاقة مع المواد الدراسية الأخرى			
Prerequisite module	none	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	• Build on Python programming with object-oriented concepts relevant to scientific applications. • Introduce basic relational database design and SQL for organizing biochemical data. • Teach development of simple GUI applications for laboratory data entry and analysis. • Strengthen practical skills in integrating programming, databases, and user interfaces.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	After completing this module, students will be able to: 1. Apply object-oriented programming principles in Python. 2. Design and query simple relational databases using SQL. 3. Develop basic graphical user interfaces for data input and display. 4. Connect GUIs with databases or files to store and retrieve lab data. 5. Validate input data and handle errors in applications. 6. Document and present a small software project relevant to biochemistry.
Indicative Contents المحتويات الإرشادية	• Review of Python fundamentals and introduction to OOP • Classes, objects, inheritance, and encapsulation • Relational database concepts and ER modeling • Basic SQL commands (CREATE, SELECT, INSERT, UPDATE, DELETE) • GUI design fundamentals (e.g., Tkinter in Python) • Event handling in GUI applications • Linking GUI applications with databases or files • Input validation and error handling • Project planning, implementation, and documentation

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	• Theoretical sessions focused on applications in biochemistry • Weekly labs with step-by-step project development • Hands-on exercises and continuous instructor support • Final mini-project integrating all skills

Student Workload (SWL)
الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	48	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	3.2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	27	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	1.8
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	75		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	5% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	1	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	10% (10)	13	LO # 5, 8 and 10

Summative assessment	Midterm Exam	2 hr	10% (10)	7	LO # 1-7
	Final Exam	3hr	50% (50)	15	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Review Python basics and intro to OOP
Week 2	Inheritance and encapsulation
Week 3	Introduction to relational databases
Week 4	Basic SQL: CREATE, SELECT, INSERT
Week 5	Advanced SQL: UPDATE, DELETE, WHERE
Week 6	GUI basics (Tkinter)
Week 7	Event handling in GUIs
Week 8	Connecting GUI with databases
Week 9	Input validation and error handling
Week 10	Modular project design
Week 11	Data visualization in Python
Week 12	Testing and debugging
Week 13	Project implementation
Week 14	Project presentation and final exam preparation
Week 15	

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1 -2	Implementing simple classes

Week 2 -4	Extending classes for lab data structures
Week 3	Designing simple biochemical sample tables
Week 4	Creating tables and inserting sample data
Week 5	Querying and modifying data
Week 6	Designing input forms
Week 7	Adding buttons and interactions
Week 8	Saving and retrieving data
Week9	Validating lab data entry
Week 10	Planning the mini-project
Week 11	Graphs and charts for lab results
Week 12	Refining and testing software
Week 13	Completing the mini-project
Week 14	Demonstration and review
Week 15	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	• Connolly & Begg, *Database Systems: A Practical Approach* (selected chapters) • Downey, A. *Think Python* • Python Tkinter tutorials (online)	Yes
Recommended Texts	• Ramalho, L. *Fluent Python* • Eck, D. *Introduction to Programming Using Python*	Yes
Websites	• realpython.com • sqlite.org • geeksforgeeks.org	

APPENDIX:

GRADING SCHEME مخطط الدرجا ت				
Group	**Grade**	التقدي ر	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A -** Excellent	امتيا ز	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	مقبول بقرا ر	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note:				

NB 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.

ملاحظة: هذا النموذج تم وضعه وتقديمه من قبل مديرية ضمان الجودة في وزارة التعليم العالي والبحث العلمي