وزارة التعليم العالي والبحث العلمي
جهاز الإشراف العلمي والتقويم العلمي
مديرية ضمان الجودة والاعتماد الأكاديمي
دائرة الاعتماد

وصف البرنامج الاكاديمي

والمفردات

2025

مقدمة:

البرنامج التعليمي هو مجموعة مخططة جيدًا من المقررات التي تشمل الإجراءات والخبرات مرتبة في شكل منهج أكاديمي. الهدف الرئيسي منه هو تحسين وبناء مهارات الخريجين بحيث يكونون جاهزين لسوق العمل. يتم مراجعة البرنامج وتقييمه كل عام من خلال إجراءات التدقيق الداخلي أو الخارجي وبرامج مثل برنامج الممتحن الخارجي.

وصف البرنامج الأكاديمي هو ملخص قصير للخصائص الرئيسية للبرنامج ومقرراته. يوضح المهارات التي يعمل الطلاب على تطويرها بناءً على أهداف البرنامج. هذا الوصف مهم جدًا لأنه الجزء الأساسي للحصول على اعتماد البرنامج، ويتم كتابته بواسطة هيئة التدريس معًا تحت إشراف اللجان العلمية في الأقسام العلمية.

يشمل هذا الدليل، في نسخته الثانية، وصفًا للبرنامج الأكاديمي بعد تحديث المواد والفقرات في الدليل السابق في ضوء التحديثات والتطورات في النظام التعليمي في العراق، والذي تضمن وصف البرنامج الأكاديمي بصيغته التقليدية (سنوي، فصلي)، بالإضافة إلى اعتماد وصف البرنامج الأكاديمي المتداول وفقًا لكتاب قسم الدراسات رقم T 3/2906 بتاريخ 2023/5/3 بشأن البرامج التي تعتمد عملية بولونيا كأساس لعملها.

وفي هذا الصدد، يمكننا التأكيد فقط على أهمية كتابة وصف للبرامج الأكاديمية والمقررات لضمان سير العملية التعليمية بشكل صحيح.

المفاهيم والمصطلحات:

وصف البرنامج الأكاديمي :يوفر وصف البرنامج الأكاديمي ملخصًا موجزًا لرؤيته ورسالة البرنامج وأهدافه، بما في ذلك وصف دقيق لمخرجات التعلم المستهدفة وفق استراتيجيات تعليمية محددة.

وصف المقرر الدراسي :يقدم ملخصًا موجزًا لأهم خصائص المقرر والمخرجات التعليمية المتوقعة من الطلاب لتحقيقها، ويُظهر ما إذا كانوا قد استفادوا إلى أقصى حد من الفرص التعليمية المتاحة. ويستمد وصف المقرر من وصف البرنامج الأكاديمي.

رؤية البرنامج :صورة طموحة لمستقبل البرنامج الأكاديمي ليكون متقدمًا، ملهمًا، محفزًا، واقعيًا وقابلًا للتطبيق.

رسالة البرنامج :تحدد باختصار الأهداف والأنشطة اللازمة لتحقيقها وتوضح مسارات وتوجهات تطوير البرنامج.

أهداف البرنامج :هي بيانات تصف ما يهدف البرنامج الأكاديمي إلى تحقيقه خلال فترة زمنية محددة، ويجب أن تكون قابلة للقياس والملاحظة.

هيكل المنهج الدراسي :جميع المقررات / المواد المدرجة في البرنامج الأكاديمي وفق النظام التعليمي المعتمد (فصلي، سنوي، عملية بولونيا)، سواء كانت متطلبًا (وزارة، جامعة، كلية، قسم علمي) مع عدد الساعات المعتمدة.

مخرجات التعلم :مجموعة متوافقة من المعرفة والمهارات والقيم التي يكتسبها الطلاب بعد إتمام البرنامج الأكاديمي بنجاح، ويجب أن تحدد مخرجات التعلم لكل مقرر بطريقة تحقق أهداف البرنامج.

استراتيجيات التدريس والتعلم :هي الاستراتيجيات التي يستخدمها أعضاء هيئة التدريس لتطوير تعلم الطلاب وتعليمهم، وهي خطط يتم اتباعها للوصول إلى أهداف التعلم. تصف جميع الأنشطة الصفية واللاصفية لتحقيق مخرجات التعلم للبرنامج

اسم الجامعة: كلية علوم الحاسوب وتكنولوجيا المعلومات
الكلية / المعهد: جامعة البصرة
القسم العلمي: الأمن السيبراني
اسم البرنامج الأكاديمي أو المهني: بكالوريوس في الأمن السيبراني
اسم الشهادة النهائية: بكالوريوس في الأمن السيبراني
النظام الأكاديمي: برنامج بولونيا
تاريخ إعداد الوصف: 1 سبتمبر 2025
تاريخ استكمال الملف: 15 سبتمبر 2025

تم فحص الملف من قبل:

دائرة ضمان الجودة وأداء الجامعة
مدير دائرة ضمان الجودة وأداء الجامعة _____ :التاريخ_____ :
التوقيع_____ :

موافقة العميد

المنهج الدراسي للسنة الأولى، الفصل الدراسي الأول

No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w)							SSWL	USSWL	SWL
					CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)	Exam hr/sem	hr/ sem	hr/ sem	hr/ sem
1	CYS101	Programming Fundamentals I	اساسيات البرمجة 1	English	2		2		1		4	79	96	175
2	CYS102	Discrete Structures	الهياكل المتقطعة	English	3				1		4	64	61	125
3	CYS103	Computer Organization	تنظيم الحواسيب	English	2		2				4	64	61	125
4	CYS104	Data Security Principles	مبادئ امنية البيانات	English	2		2		1		4	79	71	150
5	CYS106	الديمقراطية وحقوق الانسان	الديمقراطية وحقوق الانسان	Arabic	1						4	19	31	50
6	CYS 105	Calculus	الرياضيات	English	3				1		4	64	61	125
				Total	13	0	6	0	4	0	24	369	381	750

Module 1

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information

معلومات المادة الدراسية

Module Title	Computer Programmingl برمجة الحاسبة 1	**Module Delivery**
Module Type	Core	☒ **Theory** ☐ **Lecture** ☒ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**
Module Code	CyB 101	
ECTS Credits	7	
SWL (hr/sem)	175	

Module Level	UG	**Semester of Delivery**	1
Administering Department	CyB	**College**	CSIS
Module Leader	Dr. Haider	**e-mail**	
Module Leader's Acad. Title	Assist Proff	**Module Leader's Qualification**	PHD
Module Tutor	Name (if available)	**e-mail**	E-mail
Peer Reviewer Name	Name	**e-mail**	E-mail
Scientific Committee Approval Date		**Version Number**	1.0

Relation with other Modules

العلاقة مع المواد الدراسية الأخرى

Prerequisite module	None	**Semester**	
Co-requisites module	CyB107 Computer Programming II	**Semester**	2/Level 1

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	.1 Gaining knowledge of programming languages offers valuable insights into various other domains and disciplines.. .2 Acquiring proficiency in the effective and responsible utilization and administration of programming languages is crucial for managers and other professionals in today's interconnected global information-driven society. .3 Learn that people must understand the components of programming langauge and how all of these components work together to bring value to an organization. .4 We need to direct our attention to the role that programming languages play in today's interconnected global information society. .5 The competitiveness of many companies relies significantly on the efficient utilization of information systems. Consequently, we need to consider the potential benefits and drawbacks that integrating information systems can bring to both businesses and society. .6 what is a programming languge ? A languge is a group of interrelated statement working together toward a common goal by accepting inputs and producing outputs in an organized transformation process .7 why learing algorithm? .8 why learing Flow chart? .9 Why learn about Basic input/output? .10 Why learn about loop type? - for..loop - while..loop .11 Why Learn about functions? - Defining a Function, Calling a Function, Function Arguments(Call by value, Call by Reference)

Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1- Provide the student with the essential skills required to excel in the Python programming language. Python power users possess a comprehensive grasp of the language and can discern the most appropriate tools or functions for specific situations. 2- Acquire crucial skills for working with both basic 'if' statements and nested 'if' statements. 3- Gain essential skills for handling 'for' statements and nested 'for' statements, which are types of loops. 4- Acquire proficiency in writing and utilizing the essential functions.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. - Principles of Python Language How can use Python program , entering of variable types , basic input/output statement, and type of operators. - IF TYPE If statement,nested if statement. - LOOP TYPES For loop,nested for loop ,while,do while . - Function Defining a Function, Calling a Function, Function Arguments(Call by value, Call by Reference)

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 and the lab, 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 أسبوعا			
Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	5	**Structured SWL (h/sem)** الحمل الدراسي المنتظم للطالب خلال الفصل	79
Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	6.4	**Unstructured SWL (h/sem)** الحمل الدراسي غير المنتظم للطالب خلال الفصل	96
		Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**175**

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction to Computer Programming language
Week 2	Algorithm Design
Week 3	Flowcharts
Week 4	COMMENTS
Week 5	DATA TYPES
Week 6	VARIABLE TYPES
Week 7	CONSTANTS/LITERALS
Week 8	BASIC INPUT/OUTPUT
Week 9	OPERATORS
Week 10	DECISION-MAKING STATEMENTS
Week 11	LOOP TYPES (for ..loop)
Week 12	LOOP TYPES(while..loop)
Week 13	LOOP TYPES(Do..while loop)
Week 14	FUNCTIONS
Week 15	FUNCTIONS(void)
Week 16	**Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Lab 1: learing how can use program Python
Week 2	Lab 2: execute many examples of statements BASIC INPUT/OUTPUT
Week 3	Lab 3: execute many examples of VARIABLE TYPES
Week 4	Lab 4: execute many examples of if statement
Week 5	Lab 5: execute many examples of nested if statement
Week 6	Lab 6: execute many examples of switch statement
Week 7	Lab 7: execute many examples of for..loop statement
Week 8	Lab 8 execute many examples of for..loop statement
Week 9	Lab9: execute many examples of nested for..loop statement
Week 10	Lab 10: execute many examples of nested for..loop statement
Week 11	Lab 11: execute many examples of While..loop statement
Week 12	Lab 12: execute many examples of Do..While..loop statement
Week 13	Lab 13:execute many examples of functions
Week 14	Lab 14: execute many examples of functions(void)
Week 15	Lab15: execute many examples of functions(void)

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	**Python Programming** by Adam Steward - 2022	No
Recommended Texts	**Python Programming** : An Introduction to Computer Science : Second Edition 2009	No

Websites	https://www.guru99.com/python-tutorials.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.

Module 2

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information
معلومات المادة الدراسية

Module Title	Discrete Structures هياكل متقطعة	**Module Delivery**	
Module Type	Core	☒ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	CyS102		
ECTS Credits	5		
SWL (hr/sem)	125		
Module Level	UG	**Semester of Delivery**	1
Administering Department	CyS	**College**	College of Computer Science and Information Technology
Module Leader		**e-mail**	
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	01/10/2023	**Version Number**	1.0

Relation with other Modules
العلاقة 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 Objectives أهداف المادة الدراسية	This course aims at teaching students how to think mathematically. Students will learn a set of mathematical facts and techniques as well as some major discrete structures that related with computers. They will also learn how to

	use these facts, techniques and discrete structures to design computer-based solutions for real life problems.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	.1 Developing the acquisition of some acquired skills from inflammation Everyday life. .a .2 Developing mathematical skills (skills that help form mathematical sense) skills Estimation, mental calculation, judging the reasonableness of the results, etc.). .3 Acquiring various methods of conducting operations. .4 Develop the ability to seriously classify and collect numerous data, tabulate and read them representation and interpretation. .5 Students should understand relations, equivalence relations, and partial orders. .6 Students should develop problem-solving skills related to the design and analysis of algorithms.
Indicative Contents المحتويات الإرشادية	.1 Understanding of Fundamental Concepts: ○ Demonstrating a solid understanding of foundational concepts in discrete mathematics, such as set theory, propositional and first-order logic, and mathematical proof techniques. .2 Combinatorial Problem Solving: ○ Solving combinatorial problems by applying techniques like permutations, combinations, binomial coefficients, and counting principles. ○ Analyzing and solving problems using the Pigeonhole Principle and the principle of Inclusion-Exclusion. .3 Mastery of Graph Theory: ○ Demonstrating proficiency in graph theory, including the ability to define and work with graphs, trees, paths, cycles, connectivity, and various graph algorithms. ○ Solving real-world problems using graph theory, like network design, shortest path algorithms, and matching problems. .4 Application to Computer Science: ○ Applying discrete structures concepts to computer science, such as understanding finite state machines, formal languages, regular expressions, and context-free grammars. ○ Designing and analyzing algorithms based on discrete mathematics principles. .5 Relations and Functions: ○ Understanding relations, equivalence relations, and partial orders, and being able to apply them to solve problems. ○ Working with functions, including injective, surjective, and bijective functions, and understanding their properties.

	6. Proof and Mathematical Rigor: ○ Demonstrating the ability to construct clear and rigorous mathematical proofs using techniques like mathematical induction, proof by contradiction, and direct proof. 7. Algorithm Analysis: ○ Analyzing the time and space complexity of algorithms. ○ Understanding the basics of computational complexity theory, such as classifying problems into P, NP, and NP-complete. 8. Problem-Solving Skills: ○ Developing problem-solving skills by applying discrete mathematics concepts to a wide range of practical and theoretical problems. ○ Formulating and solving mathematical and algorithmic problems. 9. Application to Diverse Fields: ○ Recognizing how discrete structures are applied in various fields, such as computer science, cryptography, network design, and operations research. 10. Mathematical Modeling: ○ Using discrete structures to model and analyze real-world scenarios, including optimization problems, scheduling, and decision-making. 11. Critical Thinking and Abstraction: ○ Developing critical thinking skills and the ability to abstract complex problems into simpler, discrete structures for analysis. ○ These indicative outcomes reflect the knowledge and skills that students typically gain from a course in discrete structures. Depending on the course's depth and specific focus, these outcomes may be adjusted or expanded to suit the learning objectives of the program or institution.

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 solving exercises.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا			
Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	4.2	**Structured SWL (h/sem)** الحمل الدراسي المنتظم للطالب خلال الفصل	64
Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	4	**Unstructured SWL (h/sem)** الحمل الدراسي غير المنتظم للطالب خلال الفصل	61
		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**	2	20% (10)	5 and 10	LO #1, #2 and #4
	Assignments	2	20% (10)	2 and 12	LO #1, #3
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	LO #1 - #5
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered

Week 1	• Sets • Subsets • Operations on sets • Computer Representation of Sets
Week 2	• Cartesian product • Sequences • Properties of Integers
Week 3	• Matrices • Propositional and Logical Operations • Conditional Statements
Week 4	• Conditional Statements • Mathematical Induction • Product sets and Partitions
Week 5	• Methods of Proving Theorems • Recursive • Relations
Week 6	• Properties of Relations • Operations Relations • Computer Representation of Relations
Week 7	• Properties of Relations • Equivalence Relations • Computer Representation of Relations and Digraphs • Operations and Relations
Week 8	• Functions • Functions for Computer Science • Domain and codomain of the function
Week 9	• Range of the function • Graph of function • Functions types

Week 10	• Permutation Functions • Graph • The types of graphs
Week 11	• Some Special Simple Graphs • Representing Graphs • Isomorphism and Isomorphic of graphs
Week 12	• Common graphs • Some important concepts
Week 13	• Kinds of graphs • More graphs
Week 14	• Trees • Labeled Trees
Week 15	• Tree Searching • Undirected Trees
Week 16	• Tree Traversal • Traversal Algorithms • Infix, Prefix, and Postfix Notation

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	**Available in the Library?**
Required Texts	Kolman, Busby, and Ross (2008). Discrete Mathematical Structures, 6th ed. Prentice Hall.	Yes
Recommended Texts	Kenneth Rosen (2012). Discrete Mathematics and Its Applications, 7th ed. Mc-Graw Hill.	No
Websites		

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.

Module 3

MODULE DESCRIPTION FORM
نموذج وصف المادة الدراسية

Module Information

معلومات المادة الدراسية

Module Title	**Computer Organization** تنظيم حاسوب	**Module Delivery**	
Module Type	**Basic**	☒ **Theory** **Lecture** ☐ ☒ **Lab** ☒ **Tutorial** **Practical** ☐ **Seminar** ☐	
Module Code	**CyS103**		
ECTS Credits	**5**		
SWL (hr/sem)	**125**		
Module Level	1	**Semester of Delivery**	1
Administering Department	CyS	**College**	College of Computer Science and Information Technology
Module Leader		**e-mail**	
Module Leader's Acad. Title	Assist Proff	**Module Leader's Qualification**	PHD
Module Tutor	Name (if available)	**e-mail**	E-mail
Peer Reviewer Name	Name	**e-mail**	E-mail
Scientific Committee Approval Date	1/10/2023	**Version Number**	1.0

Relation with other Modules

العلاقة مع المواد الدراسية الأخرى

Prerequisite module	None	**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 Understand Computer Organization: Explain the significance of computer organization in the context of computing systems and recognize its historical development. .2 Central Processing Unit (CPU): Identify the key components of a CPU, describe the CPU instruction execution cycle, and utilize Python for simulating CPU behavior. .3 Memory Systems: Analyze memory hierarchy, comprehend memory organization and addressing modes, and create simulations of memory systems using Python. .4 Assembly Language Programming: Familiarize themselves with assembly language, particularly MIPS assembly, and develop proficiency in writing, debugging, and simulating assembly programs using Python. .5 Input/Output (I/O) and Peripherals: Examine I/O organization, device controllers, and communication mechanisms, and simulate I/O operations using Python. .6 Computer Arithmetic: Understand binary and floating-point arithmetic, explore arithmetic operations in the Arithmetic and Logic Unit (ALU), and implement basic arithmetic operations using Python. .7 Software-Hardware Interface: Analyze the interface between software and hardware, interpret software instructions' execution on hardware, and conduct Python-based simulations of hardware interactions.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	.1 Explain the historical development and significance of computer organization. .2 Describe the components of a CPU, including the ALU, control unit, and registers, and understand the CPU's instruction execution cycle. .3 Create Python simulations to model CPU behavior. .4 Define the memory hierarchy, address modes, and organization, and develop Python-based memory system simulations. .5 Write, debug, and simulate assembly language programs, specifically in MIPS assembly, using Python. .6 Simulate I/O operations and understand I/O organization and device communication mechanisms. .7 Perform binary and floating-point arithmetic, implement basic arithmetic operations in Python, and comprehend the role of the ALU. .8 Develop Python simulations to illustrate software-hardware interactions.

Indicative Contents المحتويات الإرشادية	Indicative content includes the following. - Principles of about low level Programming How can Python program be used simulate low level programming. - How Hardware interacts with software during operation

	- The diffrencess between Processes - How programming designers improve the performance.

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 and the lab, 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 أسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	64	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4.2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	61	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4
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	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #2-#8
	Lab	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #1, #2, #3
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction to Computer Organization
Week 2	Historical development of computer architecture and the role of computer organization in computing systems.
Week 3	Components of the CPU: ALU, control unit, registers, CPU operation and the instruction execution cycle.
Week 4	Introduction to Python and its role in simulating CPU behavior.
Week 5	Memory hierarchy: primary (RAM, ROM), cache, secondary storage, memory organization and addressing modes.
Week 6	Simulating memory systems using Python.
Week 7	Introduction to assembly language. MIPS assembly language: syntax, instructions, addressing modes.
Week 8	Writing and debugging simple assembly programs using Python.
Week 9	Input/Output (I/O) and Peripherals: I/O organization and interfacing. Device controllers and communication.
Week 10	Simulating I/O operations using Python.
Week 11	Computer Arithmetic
Week 12	Computer Arithmetic Cont.
Week 13	Software-Hardware Interface
Week 14	Python-based simulations of hardware interactions.
Week 15	Review and Final Exam
Week 16	**Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: Introduction to Assembly Language: Writing and executing simple assembly programs. Understanding the syntax and structure of assembly language.

Week 2	Lab 2: Memory Systems and Addressing: Exploring memory hierarchy through simulations. Practicing memory addressing modes and calculations.
Week 3	Lab 3: CPU Operation and Registers: Simulating CPU operation and instruction execution.

	Working with CPU registers and flags.
Week 4	Lab 4: Assembly Language Programming: Writing more complex assembly programs to solve specific tasks. Debugging assembly code using tools and simulators.
Week 5	Lab 5: I/O Operations: Simulating input and output operations using Python. Interfacing with devices and device controllers.
Week 6	Lab 6: Computer Arithmetic: Implementing basic arithmetic operations in assembly language. Simulating fixed-point and floating-point arithmetic.
Week 7	Lab 7: pelining and Parallel Processing: Understanding pipelining concepts through practical examples. Exploring parallel programming using multicore processors.
Week 8	Lab 8 Memory Management and Virtual Memory: Simulating memory allocation and deallocation. Exploring virtual memory concepts and page replacement algorithms.
Week 9	Lab9: Hardware Simulations: Creating hardware simulations in Python. Simulating CPU behavior, memory systems, and I/O operations.
Week 10	Lab 10: Assembly Language Projects: Undertaking more extensive assembly language projects. Developing practical solutions to real-world problems.
Week 11	Lab 11: Benchmarking and Performance Analysis: Measuring and analyzing the performance of different architectures. Comparing the efficiency of assembly code vs. high-level languages.
Week 12	Lab 12: Operating System Interaction:
Week 13	Lab 13: Interacting with the operating system through assembly language.
Week 14	Lab 14: Understanding system calls and their impact on hardware.
Week 15	Lab15: Final Project

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**

Required Texts	**Computer Organization and Design" by David A. Patterson and John L. Hennessy".**	No
Recommended Texts	**Computer Systems: A Programmer's Perspective" by Randal E. Bryant and David R. O'Hallaron"**	No
Websites		

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.

Module 4

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية		
Module Title	**Calculus**	**Module Delivery**
Module Type	Core	**☒ Theory** **☒ l Lectures**
Module Code	**CyB 106**	
ECTS Credits	5	
SWL (hr/sem)	100	

Module Level	UG	**Semester of Delivery**	1
Administering Department	Type Dept. Code	**College**	Type College Code
Module Leader		**e-mail**	
Module Leader's Acad. Title	Lecturer	**Module Leader's Qualification**	Ph.D.
Module Tutor	Name (if available)	**e-mail**	E-mail
Peer Reviewer Name	Name	**e-mail**	E-mail
Scientific Committee Approval Date		**Version Number**	1.0

Relation with other Modules

العلاقة مع المواد الدراسية الأخرى

Prerequisite module	Calculus	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	-Cognitive Goals .1 Upon Successful completion of this subject, students should : .2 Be able to use algebra accurately; .3 Be able to plot and interpret graphs .4 Be able to use exponential, logarithm, and trigonometric functions in applications; .5 Be able to calculate the sums of arithmetic and geometric series and use them in simple financial calculations; .6 Be able to use basic rules of differentiation and calculate derivatives of simple functions; .7 Be able to use matrix in solving linear system of equations; -Skill goals 1. Enable the student to refer the mathematical problem to a program and find a solution through the computer. 2. Student realization of the close relationship between mathematical problems and computer programs
Module Learning Outcomes	Important: Write at least 6 Learning Outcomes, better to be equal to the number of study weeks.

مخرجات التعلم للمادة الدراسية	.1 This subject is designed for students who enter university without a strong background in mathematics .2 It is also for students who are planning to enroll in subjects requiring basic numeracy skills such as sciences, computing and information technology. .3 The subject reinforces calculation skills, basic algebra . .4 This subject is designed to work with formula. .5 It is also to use applications of exponential and logarithmic functions. .6 It is designed how applying matric to solve linear system of equations.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Part A – Sequences and series Sequence is a function whose domain is the set of natural numbers. The terms of the sequence are the function values. There will be studied two types of sequences: arithmetic and geometric sequences with their partial sums. While series means that the infinite sum of geometric sequence. [12 hrs] Part B – Matrices Matrices are simply a rectangular array of numbers with **m** rows and **n** columns . There will be studied some: types of matrices, algebra of matrices. It is also studied how to find inverse of matrix, how to use matrix and its inverse

to solve linear system of equations, how to find determinant of matrix and use it to solve linear system of equations. [12 hrs]

Part C – Derivatives and integrals

Derivatives mean that if $f: x \to y$ is a function, the derivative of a function f at a point x_0 written $f'(x_0)$; is given by

, If this limit exists and finite. There will be studied $f'(x_0) = \lim_{x \to x_0} \frac{f(x)-f(x_0)}{x-x_0}$ the derivatives of usual functions, implicit derivatives, derivatives of trigonometric functions, derivatives of exponential and logarithm functions. Graphical of exponential and logarithm functions. While integrals means that if $f(x)$ function defined at some interval, let $F(x)$ be another function such that $F'(x) = f(x)$, $F(x)$ called an infinite integral of $f(x)$ and is written as the following form $\int f(x)dx = F(x)) + C$. [12 hrs].

Part D – Interest

Interest is the rental fee charged by a lender to a business or an individual for the use of money . There will be studied simple and compound interests. Simple interest means that the interest is calculated *only once* for the entire time period of the loan. At the end of the time period, the borrower repays the principal plus the Interest . while compound interest means that means that the interest is calculated more than once during the time period of the loan. [9 hrs].

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	1.Explain the topic in detail by the teacher by writing the topic and explaining it on the board and other teaching aids 2. Discussion during the lecture period 3. Doing homework 4. See the websites of the subject

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا			
Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	4.2	**Structured SWL (h/sem)** الحمل الدراسي المنتظم للطالب خلال الفصل	64
Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	4	**Unstructured SWL (h/sem)** الحمل الدراسي غير المنتظم للطالب خلال الفصل	61
		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	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction – Sequences
Week 2	Arithmetic sequences and their partial sims
Week 3	Geometric sequences and their partial sums
Week 4	Series
Week 5	Matrices and algebra of matrices
Week 6	Inverse of matrices
Week 7	Solving linear system of equations by using inverse of matrices
Week 8	Determinant and using it to solve linear system of equations
Week 9	Derivatives
Week 10	Derivatives of trigonometric, exponential, logarithm functions
Week 11	Integrals
Week 12	Integral of trigonometric, exponential, logarithm functions
Week 13	Interest and simple interest

Week 14	Compound interest
Week 15	Present and future values of an annuity
Week 16	**Preparatory week before the final Exam**

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	**Available in the Library?**
Required Texts	Cheryl Cleaves, Margie Hobbs and Jeffry Noble	Yes
Recommended Texts	James Stewart , Lothar Redlin and Saleem Watson Robert Brechner and George Bergeman	Yes
Websites		

Grading Scheme

مخطط الدرجات

Group	**Grade**	التقدير	**Marks %**	**Definition**
	A – Excellent	امتياز	90 - 100	Outstanding Performance

Success Group (50 - 100)	**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.

Module 5

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information
معلومات المادة الدراسية

Module Title	**Data Security Principles**	**Module Delivery**	
Module Type	Core		☒ **Theory**
Module Code	CyS104		☐ **Lecture**
ECTS Credits	5		☒ **Lab**
SWL (hr/sem)	125		☒ **Tutorial** ☐ **Practical** ☐ **Seminar**
Module Level	UG	**Semester of Delivery**	1
Administering Department	CyS	**College**	College of Computer Sceince and Information Technology
Module Leader		**e-mail**	
Module Leader's Acad. Title	Assist Proff	**Module Leader's Qualification**	PHD
Module Tutor	Name (if available)	**e-mail**	E-mail
Peer Reviewer Name	Name	**e-mail**	E-mail

Scientific Committee Approval Date	1/10/2023	**Version Number**	1.0

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	12. Understand the core principles of data security, including confidentiality, integrity, and availability. 13. Recognize common security threats and vulnerabilities in digital environments. 14. Apply best practices for protecting personal data, devices, and online activities.

	15. Identify social engineering tactics and scams and employ strategies to avoid them. 16. Gain practical skills for securing passwords, email communication, and social media accounts. 17. Learn about malware and antivirus tools, and how to protect against them. 18. Understand the importance of privacy and compliance with data protection regulations. 19. Develop critical thinking skills to assess and respond to data security incidents.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Understand core data security principles: confidentiality, integrity, and availability. 2. Identify common security threats and vulnerabilities. 3. Explain encryption and access control mechanisms. 4. Recognize and respond to social engineering tactics. 5. Comprehend privacy regulations and compliance requirements. 6. Apply practical skills in password management and device security. 7. Evaluate real-world security scenarios and propose solutions. 8. Develop ethical and security-conscious decision-making skills.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. - Intro to Data Security - Encryption & Access Control

	- Network Security Privacy & Compliance - Social Engineering & Response - Recognizing social engineering. - Responding to threats. - Secure Practices & Review

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The course employs various strategies, including lectures, discussions, hands-on activities, group projects, assessments, online resources, and guest speakers, to engage students and develop their understanding of data security principles. These strategies aim to create an interactive and comprehensive learning environment.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	64	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4.2
Unstructured SWL (h/sem)	61	**Unstructured SWL (h/w)**	4

الحمل الدراسي غير المنتظم للطالب خلال الفصل		الحمل الدراسي غير المنتظم للطالب أسبوعيا	
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**	2	10% (10)	5 and 10	LO #1, #3,#5, #7
	Assignments	2	10% (10)	2 and 12	LO #2, #3, #6
	Lab	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #1, #2,#5, #7
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction to Data Security : Understanding data security.
Week 2	The importance of data security. Common security threats.
Week 3	Protecting Your Data: Passwords and creating strong ones.
Week 4	Securing your devices. Safe internet usage.
Week 5	Email and Social Media Safety: Recognizing phishing emails.
Week 6	Protecting social media accounts. Safe information sharing.
Week 7	Online Shopping and Banking: Secure online shopping practices.
Week 8	Protecting financial information. Safeguarding personal data..
Week 9	Privacy and Personal Information: Identifying personal information.
Week 10	Privacy settings and online profiles. Risks of oversharing.

Week 11	Malware and Viruses: Understanding malware.
Week 12	Recognizing and avoiding malware. Introduction to antivirus software.
Week 13	Social Engineering and Scams: What is social engineering?
Week 14	Common scams and how to avoid them. Reporting suspicious activities.
Week 15	Review and Final Assessment
Week 16	**Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: Orientation and Introduction to Encryption: Lab orientation, safety guidelines, and expectations. Introduction to encryption concepts. Lab tool: VeraCrypt - Setting up encrypted containers.

Week 2	Lab 2: Encryption Practices: Practical encryption exercises using VeraCrypt. Secure file storage and retrieval.
Week 3	Lab 3: Access Control Configuration: Introduction to access control. Lab tool: Windows Security Policies - Configuring access control lists (ACLs).
Week 4	Lab 4: User Authentication: Implementing user authentication and access policies. Testing and validating access control measures.
Week 5	Lab 5 Threat Recognition and Response: Understanding network traffic analysis. Lab tool: Wireshark - Analyzing network traffic for security threats.
Week 6	Lab 6: Simulated Incident Response: Hands-on exercises in simulated incident response. Developing incident response plans. Simulating fixed-point and floating-point arithmetic.
Week 7	Lab 7: Security Tool Utilization (Part 1): Lab tool: Wireshark - Advanced network traffic analysis. Identifying security incidents.

Week 8	Lab 8: Security Tool Utilization (Part 2): Lab tool: Snort - Configuring and using intrusion detection. Responding to detected intrusions.
Week 9	Lab9: Risk Assessment and Mitigation (Part 1): Introduction to vulnerability assessments. Lab tool: Nessus - Scanning for vulnerabilities.
Week 10	Lab 10: Risk Assessment and Mitigation (Part 2): Analyzing vulnerability scan results. Proposing security measures based on findings.
Week 11	Lab 11: Secure Communication: Introduction to secure communication. Lab tool: GnuPG (GPG) - Configuring email encryption using GPG.
Week 12	Lab 12: Secure File Transfer: Secure file transfer using GPG. Ensuring confidentiality and integrity.
Week 13	Lab 13: Final Project (Part 1):

	Introduction to the final project. Project selection and planning.
Week 14	Lab 14: Final Project (Part 2): Project work and implementation. Troubleshooting and finalizing project outcomes.
Week 15	Lab15: Project Presentations and Course Conclusion

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	**Principles of Information Security" by Michael E. Whitman and Herbert J. Mattord**	No
Recommended Texts	**Computer Security: Principles and Practice" by " William Stallings and Lawrie Brown**	No
Websites	https://owasp.org	

Grading Scheme

مخطط الدرجات

Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	**A –** Excellent	امتياز	90 - 100	Outstanding Performance
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Module Information معلومات المادة الدراسية			
Module Title	Democracy and Human Rights	**Module Delivery**	
Module Type	S	☒ **Theory**	
Module Code	**CYS105**	☒ **Lecture**	
ECTS Credits	2	☐ **Lab**	
SWL (hr/sem)	75	☐ **Tutorial**	
		☐ **Practical**	
		☐ **Seminar**	
Module Level	UG	**Semester of Delivery**	1
Administering Department	CyS	**College**	College of Computer Science and Information Technology
Module Leader		**e-mail**	
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		**Version Number**	1.0

Curriculum for the First Year, Second Semester

Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w)					
						CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)
Two	1	CYS107	Programming Fundamentals II	اساسيات البرمجة 2	English	2		2		1	
	2	CYS108	Digital Logic Design	تصميم المنطق الرقمي	English	2		2		1	
	3	CYS 109	Cyber Security Principles	مبادئ الامن السيبراني	English	2				1	
	4	CYS 110	Coding & Information Theory	الترميز ونظرية المعلومات	English	2				2	
	5	CYS 112	English Language	اللغة الانكليزية	English	2					
	6	CYS 111	Probability and Statistics	الاحتمالية والاحصاء	English	3				1	
	7		جرائم البعث		Total	13	0	4	0	6	0

Module 1

Module Information معلومات المادة الدراسية			
Module Title	Computer ProgrammingII		**Module Delivery**
Module Type	Core		☒ **Theory** ☐ **Lecture** ☒ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**
Module Code	**CyS107**		
ECTS Credits	7		
SWL (hr/sem)	175		
Module Level	UG	**Semester of Delivery**	2
Administering Department	CyS	**College**	College of Computer Science and Information Technology
Module Leader		**e-mail**	
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	1/10/2023	**Version Number**	1.0

Module 2

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية		
Module Title	Logic Design	**Module Delivery**
Module Type	Core	☒ **Theory**

Module Code	CyB 108		☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
ECTS Credits	4			
SWL (hr/sem)	105			
Module Level	U(	**Semester of Delivery**	2	
Administering Department	CyB	**College**	CSIT	
Module Leader		**e-mail**		
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	/ /2023	**Version Number**	1.0	

Relation with other Modules

العلاقة مع المواد الدراسية الأخرى

Prerequisite module		**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Objectives أهداف المادة الدراسية	This course contributes primarily to the students' knowledge for working professionally in these areas of logic design. Students should be able to apply knowledge of science and engineering, as well as the techniques, skills, and modern engineering tools to analyze, design and optimize logic circuits. In addition, this course provides a modern introduction to logical design and the basic building blocks used in digital systems, in particular digital computers.

	The students will be introduced to introductory logic design, their principle of operation, analysis, and design. In sum, they will learn how to use this knowledge more easily tailor the degree of technology coverage, accommodating both electrical and computer engineering and computer science audiences.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	At the completion of the course, students will be able to: 1. Using number systems and it applies to the material of logic systems. 2. Be familiar with truth tables and how to use them for analysis and design. 3. Using switching algebra and the implementation of switching functions using the common gates AND, OR, NOT, NAND, NOR, Exclusive-OR, and Exclusive-NOR. 4. Simplification combinational logic circuits by using Karnaugh map. 5. Analyze and design combinational larger logic circuits. 6. Analyze sequential logic circuits. 7. Ability to analyze and design a system, component, or process to meet desired needs. 8. Ability to analyze, design and conduct experiments. 9. In addition to the measurable student learning outcomes listed above, the students will be able to demonstrate their knowledge of the course material by Analyze real problems through laboratory experiments. 10. The ability to apply their skills in a variety of practical sciences.
Indicative Contents المحتويات الإرشادية	**1. Number systems** • Positional number system. • Binary digits(bits). • Convert from binary to decimal. • Decimal to binary. • Hexadecimal (hex). • Octal numbering systems. • Converting between the four numbering systems (decimal, binary, Hex and octal). • Fraction of number system. • Signed and unsigned binary numbers. • Two's complement, binary addition. • Subtraction. • Binary coded decimal (BCD) codes. • ASCII code. • Gray code. **2. Combinational Logic Circuits and switching algebra.** • Switching algebra.

	• Properties of switching algebra. • Development of a truth table. • Manipulating algebraic functions. • Sum of products (SOP). • Product of sum (POS). **.3 Switching algebra and logic gates.** • Implementation of switching functions using networks of AND gates. • OR gates. • NOT gates. • DeMorgan's theorem. • From truth table to algebraic expression. • Exclusive-OR gates • Simplifying algebraic expressions. • Consensus operator. **.4 Karnaugh map.** • Two, three, and four-variable Karnaugh map. • Minimum SOP expressions using the Karnaugh map. • Finding a minimum product of sums (POS) expression. • Five and six-variable Karnaugh map. • Economize by sharing gates. **.5 Designing Combinational system.** • Design 1-bit and 2-bits full adder design 1-bit subtractor. • Subtractor/ adder. • Comparators. • Binary decoders. • Binary encoder. • Multiplexe and Demultiplexe. **.6 Analysis of sequential systems.** • D, S-R, T. • J-K flip flops. • flip flop with clear and present inputs, timing for flip flop. • Moore model circuit. • Mealy model analysis.

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 through class and laboratory experiments. The objective of this module is to serve as a cornerstone for the learning of logic design, digital system design, and computer design by students. At the same time, discussion of combinational logic: logic gates, minimization techniques, arithmetic circuits, and modern logic devices such as field programmable logic gates. This will be accomplished through group discussions, classes, reports, feedback, assignments, and interactive tutorials and by considering types of simple experiments, and exercises that are interesting to the students.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا			
Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	5	**Structured SWL (h/sem)** الحمل الدراسي المنتظم للطالب خلال الفصل	79
Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	4.2	**Unstructured SWL (h/sem)** الحمل الدراسي غير المنتظم للطالب خلال الفصل	63
		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**	4	10% (10)	2, 5, 8, and 12	LO#1-5
	Assignments	2	10% (10)	2 and 12	LO #1-6
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #3-5
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	LO #1 - #5
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Number Systems.
Week 2	Number Systems.
Week 3	Number Systems.
Week 4	Number Systems.
Week 5	Combinational Logic Circuits and switching algebra.
Week 6	Combinational Logic Circuits and switching algebra.
Week 7	Switching algebra and logic gates.
Week 8	Switching algebra and logic gates.
Week 9	Switching algebra and logic gates.
Week 10	**Mid-term Exam.**
Week 11	Karnaugh map.
Week 12	Karnaugh map.
Week 13	Designing Combinational system.
Week 14	Designing Combinational system.
Week 15	Designing Combinational system.
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Introduction to Logic circuit design software and installation method.
Week 2	Learning how to choose the appropriate software of in logic circuits design that are easy to use and have sustainability. Learning how to use interfaces of logic circuits design program.
Week 3	Introduction Logic Gates. AND Gate and Logic Diagram. Examples with Exercises.
Week 4	OR Gate and Logic Diagram. Examples with Exercises.
Week 5	NOT Gate and Logic Diagram. Examples with Exercises.
Week 6	NAND Gate and Logic Diagram. Examples with Exercises.
Week 7	NOR Gate and Logic Diagram. Examples with Exercises.
Week 8	XOR Gate and Logic Diagram. Examples with Exercises.
Week 9	XNOR Gate and Logic Diagram. Examples with Exercises.
Week 10	Logic circuits and solving problems. Drawing the truth table from a given logic circuit. Designing a logic circuit from a given problem and testing it by also drawing a truth table. Examples with Exercises.
Week 11	Boolean Algebra. Distributive Law. Rules of Boolean Algebra.

	Boolean Expression/Function. Examples with Exercises.
Week 12	De Morgan's Theorems. Examples: using Boolean Algebra techniques Learn how to Work in groups. Examples with Exercises.
Week 13	Standard Form of Boolean Expressions All Boolean expressions, regardless of their form, can be converted into two standard forms: ▪ The sum- of – products form. ▪ The product –of- sums form. Examples with Exercises.
Week 14	How to construct Full -Adder from two Half –Adders with Logic circuit Examples with Exercises.
Week 15	Exercises in general. • Work in groups
Week 16	**Preparatory week before the final Exam through test students.**

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	.1 Textbook 1: M. Morris Mano.," Digital Design", Published by McGraw-Hill, 3rd edition (2004) .2 Morris Mano M, "Digital Logic and Computer Design", Prentice Hall, New Delhi (2006).	Yes

	3. Alan B. Marcovitz - Introduction to Logic Design, 3rd Edition -McGraw-Hill (2009). 4. Charles H. Roth Jr., Larry L Kinney - Fundamentals of Logic Design, 6th Edition-CL Engineering (2009).	

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.

Module 3

Module Information

معلومات المادة الدراسية

Module Title	Coding and Information Theory نظرية معلومات و ترميز	Module Delivery
Module Type	Core	☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar
Module Code	CyS109	
ECTS Credits	6	
SWL (hr/sem)	150	

Module Level	UG	Semester of Delivery	2
Administering Department	CyS	College	College of Computer Science and information Technology
Module Leader	Name	e-mail	E-mail
Module Leader's Acad. Title	Professor	Module Leader's Qualification	Ph.D.
Module Tutor	Name (if available)	e-mail	E-mail
Peer Reviewer Name	Name	e-mail	E-mail
Scientific Committee Approval Date	1/10/2023	Version Number	1.0

Module 4
نموذج وصف المقرر

Module Information معلومات المادة الدراسية		
Module Title	Cyber Security Principles مبادئ الامن السيبراني	Module Delivery
Module Type	Core	☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar
Module Code	CyS109	
ECTS Credits	6	
SWL (hr/sem)	150	

Module Level	UG	Semester of Delivery	1

Administering Department	CyS	College	College of Computer Science and Information Technology
Module Leader	Name	e-mail	E-mail
Module Leader's Acad. Title	Professor	Module Leader's Qualification	Ph.D.
Module Tutor	Name (if available)	e-mail	E-mail
Peer Reviewer Name	Name	e-mail	E-mail
Scientific Committee Approval Date	01/10/2023	Version Number	1.0

Relation with other Modules

العلاقة 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	The aim of this course is to equip students with a strong foundation in cybersecurity principles and practices. By the end of the course, students will have a deep understanding of cybersecurity concepts, be able to recognize and mitigate common security threats, and appreciate the ethical and legal aspects of cybersecurity.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	By the end of this course, students will: 1. Understand Cybersecurity Fundamentals: Gain a strong foundation in cybersecurity principles, terminologies, and concepts. 2. Identify Security Threats: Recognize common cybersecurity threats and vulnerabilities. 3. Implement Security Measures: Learn practical strategies and tools to secure digital systems and networks. 4. Analyze Security Incidents: Develop skills to investigate and respond to security incidents.

	.5 Promote Cybersecurity Awareness: Understand the importance of cybersecurity in today's digital world and promote best practices. .6 Incident Response and Recovery: Students should be capable of developing and implementing an incident response plan, as well as understanding the steps involved in responding to and recovering from cybersecurity incidents. .7 Legal and Ethical Considerations: Students should have an awareness of the legal and ethical aspects of cybersecurity, including compliance with relevant laws and regulations, ethical hacking, and the consequences of cybercrimes.
Indicative Contents المحتويات الإرشادية	The indicative contents of the "Cyber Security Principles" course include an introduction to cybersecurity fundamentals, exploration of the cyber threat landscape, information security principles, network security, cryptography, access control and authentication, incident response, and legal and ethical considerations. These topics collectively provide students with a holistic understanding of cybersecurity concepts and practices.

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	The course employs a combination of teaching strategies, including lectures, interactive discussions, hands-on labs, and group projects. These strategies foster active engagement and practical application of cybersecurity principles, ensuring students grasp theoretical concepts while gaining valuable real-world experience. Additionally, guest lectures by industry experts and participation in cybersecurity-related events enhance students' exposure to current industry practices and challenges.

Student Workload (SWL)
الحمل الدراسي للطالب

Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	3.2	Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	49
Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	5	Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	76
		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	2	10% (10)	5, 10	LO #1, 2, 3
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO # 5, 7
Summative assessment	Midterm Exam	2 hr	10% (10)	7	LO # 1-7
	Final Exam	2 hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الأسبوعي النظري	
	Material Covered
Week 1	Introduction to Cyber Security Definition and importance of cybersecurity.
Week 2	Historical development and evolution of cyber threats. Ethical and legal considerations in cybersecurity.
Week 3	Cyber Threat Landscape Types of cyber threats (e.g., malware, phishing, DDoS attacks).
Week 4	Understanding threat actors and motivations.
Week 5	Information Security Principles Confidentiality, integrity, and availability (CIA triad).
Week 6	Security policies, standards, and guidelines.
Week 7	Network Security Network security basics.
Week 8	Firewalls, intrusion detection systems (IDS), and intrusion prevention systems (IPS).
Week 9	Cryptography Principles of encryption and decryption.
Week 10	Cryptographic algorithms and protocols.
Week 11	Access Control and Authentication User authentication methods (e.g., passwords, multi-factor authentication).
Week 12	Role-based access control (RBAC) and permissions.
Week 13	Security Incidents and Response Identifying and responding to security incidents.
Week 14	Developing an incident response plan.
Week 15	Final Review and Examination

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab1: Introduction to Lab Environment Setting up the lab environment
Week 2	Lab 2: introduction to lab tools and resources.
Week 3	Lab 3: Vulnerability Assessment (Aligned with Cyber Threat Landscape) Conducting vulnerability scans.
Week 4	Lab 4: Identifying and prioritizing vulnerabilities.
Week 5	Lab 5: Network Monitoring (Aligned with Network Security) Monitoring network traffic and anomalies.
Week 6	Lab 6: Analyzing network logs and events.
Week 7	Lab 7: Ethical Hacking (Aligned with Ethical Hacking) Introduction to ethical hacking.
Week 8	Lab8: Performing ethical hacking exercises.
Week 9	Lab9: Incident Response (Aligned with Security Incidents and Response) Developing an incident response plan.
Week 10	Lab10: Identifying, analyzing, and mitigating security incidents.
Week 11	Lab11: Security Solutions (Aligned with Security Solutions) Configuring and deploying security solutions (e.g., firewalls, intrusion detection systems).
Week 12	Lab12: Conducting security assessments.
Week 13	Lab13: Group Projects (Aligned with Various Topics)
Week 14	Lab14: Collaborative group projects on cybersecurity scenarios.
Week 15	Lab15: Final Lab Review and Assessment (Aligned with Final Review and Examination)

Learning and Teaching Resources مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	**“Cybersecurity: Principles and Practice" by William Stallings and Lawrie Brown**	No
Recommended Texts	**"Introduction to Computer and Network Security: Navigating Shades of Gray" by Timothy Shimeall and Jonathan Spring:**	No
Websites		

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.

Module 5

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information
معلومات المادة الدراسية

Module Title	English II إنكليزي	**Module Delivery**
Module Type	Basic	☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**
Module Code	CyB 111	
ECTS Credits	3	
SWL (hr/sem)	75	

Module Level	UG	**Semester of Delivery**	2
Administering Department	CyB	**College**	CSIT
Module Leader		**e-mail**	
Module Leader's Acad. Title	Professor	**Module Leader's Qualification**	Ph.D.
Module Tutor		**e-mail**	
Peer Reviewer Name		**e-mail**	
Scientific Committee Approval Date	/ /2023	**Version Number**	1.0

Relation with other Modules
العلاقة مع المواد الدراسية الأخرى

Prerequisite module	CyB105	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1. Developing communication approaches. 2. Enhancing total physical response (TPR). 3. Establishing multi-outcome learning (English and science knowledge for instance).
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. **Improved Communication Skills:** Students should be able to communicate more effectively in English, expressing themselves with greater fluency and accuracy. They can participate in everyday conversations, express opinions, and discuss various topics. 2. **Expanded Vocabulary:** Learners should have developed a broader range of vocabulary, allowing them to understand and use a wider variety of words and expressions. 3. **Grammar Proficiency:** Students are expected to have a better grasp of English grammar, allowing them to construct more complex sentences and convey different tenses and aspects more accurately. 4. **Reading Comprehension:** Learners should be able to read and comprehend a variety of texts, such as articles, short stories, and excerpts from novels, with a reasonable level of understanding. 5. **Writing Skills:** Students should be able to write coherent paragraphs and short texts, such as emails, letters, and simple essays, demonstrating improved sentence structure and organization. 6. **Listening Skills:** Learners should have developed better listening skills, allowing them to understand and follow conversations, interviews, and media in English with less difficulty. 7. **Cultural Awareness:** At this level, students may have been exposed to various cultural aspects of English-speaking countries, leading to a better understanding of cultural norms and customs.

	.8 **Independent Learning:** Students should be more confident and independent in their language learning journey, taking initiatives to practice and learn outside of the classroom. .9 **Preparation for Advanced Levels:** English Level II usually serves as a foundation for more advanced language courses. After completing this level, students should be ready to progress to higher-level language studies.
Indicative Contents المحتويات الإرشادية	International student: READING: Going abroad to study. • Following instructions: filling in forms • Reading methods: skim; scan; intensive reading; extensive reading WRITING: A host family • Checking your writing: error correction - punctuation and spelling • Writing an informal email Where in the world: READING: Three countries • Skimming and scanning: reading for the general idea, and for particular information WRITING: My country • Brain storming ideas: topic areas and examples; • completing a paragraph • Linking ideas (1): but, however, although • Writing a description of my country Newspaper articles: READING: An unexpected journey • Predicting content: using the title and the pictures • Meaning from context: guessing the meaning of new words WRITING My country • Brainstorming ideas: topic areas and examples; completing a paragraph

	• Linking ideas (1): but, however, although Writing a description of my country Modern technology: READING Innovation • Purpose and audience (1 an d 2): using visual and written clues WRITING Mistaken identity • Sentences/Paragraphs; helping your writing flow • Varying the structure: making writing interesting Writing an article Conferences and visits READING: A conference in Istanbul • Purpose and audience (1 an d 2): using visual and written clues WRITING Invitations • Using formal expressions: writing academic emails and letters • Writing a formal email Science and our world: READING: Air pollution • Making notes: organizing recording, and remembering important information • Interpreting meaning; recognizing fact and speculation WRITING Technology - good or bad? • Organizing ideas (1): planning the arguments for and against • Linking ideas (2): first, for instance, in conclusion ... Writing a discursive essay People: past and present READING: Three famous writers • Using original sources: dealing with difficult language and unknown vocabulary WRITING: Trends • Paraphrasing and summarizing: using other sources • Writing a summary

	The world of IT: READING: Computers • Rephrasing and explaining; dealing with difficult scientific and technological words • Avoiding repetition (2): pronouns and what they refer to WRITING: IT - benefits and drawbacks • Linking ideas (3): cause and result Coherent writing; writing up notes • Writing from notes Inventions, discoveries, and processes: READING: How things work • Intensive reading: strategies for focusing your reading • Linking ideas (4); sequencing words to describe a process WRITING How things are made • The passive voice; writing in neutral style • Clarifying a sequence: describing a process • Writing a description of a process Travel and tourism: READING: International tourism • Interpreting data: statistical information in graphs, charts, and texts VOCABULARY DEVELOPMENT Varying vocabulary (2) • A voiding repetition (3): describing graphs using synonyms, adjectives + nouns, verbs + adverbs

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	For Teachers:

	.1 **Interactive and Communicative Approach:** Encourage students to engage in meaningful conversations, discussions, and role-plays. This approach emphasizes real-life communication and helps students practice using English in different contexts. .2 **Error Correction:** Provide constructive feedback on students' errors without discouraging them. Focus on correcting essential mistakes that hinder communication while praising their efforts to build confidence. .3 **Contextual Learning:** Use authentic materials like articles, videos, and short stories to introduce new vocabulary and grammar in relevant contexts. This helps students understand language usage in real-life situations. .4 **Task-Based Learning:** Design activities and tasks that require students to use English to complete meaningful projects or solve problems. This approach fosters critical thinking and language application skills. .5 **Grammar in Context:** Teach grammar points within the context of authentic texts or dialogues. This helps students see how grammar functions in real communication rather than just learning rules in isolation. .6 **Encourage Reading:** Assign reading materials suited to the students' proficiency level. Reading improves vocabulary, comprehension, and exposes students to different writing styles. .7 **Listening Practice:** Provide opportunities for listening exercises, such as watching English-language videos, movies, or podcasts. This enhances listening skills and exposes students to different accents and speech patterns. .8 **Writing Practice:** Assign writing tasks like essays, emails, or short stories. Provide feedback on their writing to improve their skills gradually. For Students: .1 **Consistent Practice:** Regularly practice reading, writing, listening, and speaking in English. Consistency is crucial for improvement. .2 **Use Language Apps and Online Resources:** Utilize language learning apps and online resources to reinforce learning, expand vocabulary, and improve grammar.

	.3 **Join Language Exchange Groups:** Engage in language exchange programs or groups where you can practice speaking English with native speakers or other learners. .4 **Set Goals:** Establish clear language learning goals and track your progress. Celebrate achievements and milestones. .5 **Immerse Yourself:** Surround yourself with English as much as possible. Watch English movies, TV shows, and listen to English music or podcasts. .6 **Keep a Language Journal:** Write down new words, expressions, and grammar rules you learn. Review and practice them regularly. .7 **Practice with Different Media:** Practice English through various mediums like reading books, watching documentaries, listening to news, or participating in online forums. .8 **Be Patient and Persistent:** Language learning takes time and effort. Stay motivated and persistent even if you encounter challenges

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا			
Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	2	**Structured SWL (h/sem)** الحمل الدراسي المنتظم للطالب خلال الفصل	33
Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	2.8	**Unstructured SWL (h/sem)** الحمل الدراسي غير المنتظم للطالب خلال الفصل	42
		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	10% (10)	5 and 10	LO #1, #2 and #10,
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Report	1	0% (10)2	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	International student
Week 2	Where in the world
Week 3	Newspaper articles
Week 4	Conferences and visits
Week 5	Science and our world
Week 6	Midterm exam
Week 7	People: past and present
Week 8	The world of IT

Week 9	Inventions, discoveries, and processes
Week 10	Travel and tourism
Week 11	Final exam

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Sarah Philpot. Headway: Academic skills- reading, writing, and study skills. LEVEL 2 Student's Book. Oxford.	Yes
Recommended Texts		
Websites		

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	**FX –** Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded

Considerable amount of work required	(0-44)	راسب	**F –** Fail	**(0 – 49)**

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.

Module 6

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية			
Module Title	جرائم حزب البعث البائد 2023 Crimes of the Defunct Baath Party – 2023	**Module Delivery**	
Module Type		☒ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	UOB 202		
ECTS Credits			
SWL (hr/sem)			
Module Level	ا	**Semester of Delivery**	
Administering Department		**College**	
Module Leader	م. م. زينب علي حسين	**e-mail**	zainab.alii@uobasrah.edu.iq
Module Leader's Acad. Title		**Module Leader's Qualification**	

Module Tutor		**e-mail**	
Peer Reviewer Name		**e-mail**	
Scientific Committee Approval Date		**Version Number**	

Relation with other Modules

العلاقة مع المواد الدراسية الأخرى

Prerequisite module	توضح هذه المادة للطالب ضرورة الالتزام بمنطلقات أخلاقية في تدريس هذه المادة المعرفية، التي يجب نقلها للأجيال الحالية والقادمة، لأنها تهتم بدراسة وتدريس حقبة مرت على الدولة العراقية عرف عنها انتهاكها لحقوق الإنسان وارتكابها لجرائم ضد الإنسانية واشتهارها بحقبة المقابر والإبادات الجماعية.	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Objectives أهداف المادة الدراسية	تكمن اهمية المنهاج في اطلاع الطلبة على جرائم قتل العلماء العراقيين، منهم رجال الدين الذين وقفوا ضد البعث، وقمع الانتفاضة الشعبانية، والجرائم ضد التركمان خصوصاً في منطقة التسعين بمحافظة كركوك، التي تضمنت عمليات تهجير واستيلاء على الأراضي وضمها إلى محافظات أخرى. والجرائم العابرة للحدود التي أدت إلى شن حروب خارجية ضد دول الجوار مثل إيران والكويت.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	هي حلقة معرفية بحثية مفقودة في المجال البحثي العراقي تتعلق بأكثر من ثلاثة عقود حكم فيها حزب البعث العراق وارتكب خلالها جرائم إنسانية وسياسية كبيرة، لتعرض على الطالب وتتم مناقشتها على طريقة الأسئلة المباشرة.
Indicative Contents المحتويات الإرشادية	معرفة طبيعة النظام السياسي الشمولي الذي عمل على تشكيله حزب البعث، الذي لم يقتصر تأثيره على العراق فحسب إنما شمل دولا عدة، وفي مجالي الدراسات الفلسفية والنفسية هناك موضوعات متعلقة بدراسة صناعة الخوف، والقسوة والعنف، وهي من المرتكزات الرئيسة لحزب البعث، كذلك دراسة الآثار الاجتماعية والنفسية التي نتجت عن الإبادات الجماعية وانتهاكات حقوق الانسان.

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies	استراتيجية التعليم والتعلم 1-محاضرات عن المادة على شكل ورقي. 2-القاء المحاضرات بشكل تفصيلي. 3-طلب تقارير دورية وواجبات بيتية عن المواضيع الاساسية للمادة. 4-مناقشة يومية لمعرفة مدى استيعاب الطلبة للمادة ووضع تقييم للمشاركات اليومية. 5-امتحانات يومية (كوزات) وامتحانات شهرية للمنهج الدراسي والامتحان النهائي.

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا

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

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Report	1	20% (20)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered

Week 1	انتهاكات الحقوق والحريات المبحث الأول: نبذة وصفية عن الأنظمة السياسية في العراق (1921-2003)
Week 2	المبحث الثاني: انتهاكات النظام البعثي للحقوق والحريات العامة
Week 3	المبحث الثالث: اثر سلوكيات النظام البعثي في المجتمع
Week 4	المبحث الرابع: اثر المرحلة الانتقالية في محاربة السياسة الاستبدادية
Week 5	الميدان النفسي والميدان الاجتماعي
Week 6	الدين والدولة
Week 7	الثقافة والاعلام وعسكرة المجتمع
Week 8	الامتحان الأول
Week 9	أثر الحروب على البيئة والسكان
Week 10	استعمال الأسلحة المحرمة دولياً والتلوث البيئي
Week 11	سياسة الأرض المحروقة
Week 12	تجفيف الاهوار والهجرة القسرية
Week 13	تدمير البيئة الزراعية
Week 14	المقابر الجماعية وقصف دور العبادة
Week 15	الامتحان النهائي
Week 16	

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts		Yes
Recommended Texts		
Websites		

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

Fair but with major shortcomings	60 - 69	متوسط	**D -** Satisfactory	
Work meets minimum criteria	50 - 59	مقبول	**E -** Sufficient	
More work required but credit awarded	(45-49)	راسب (قيد المعالجة)	**FX –** Fail	**Fail Group (0 – 49)**
Considerable amount of work required	(0-44)	راسب	**F –** Fail	

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.

Curriculum for the second Year, First Semester.

1

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية		
Module Title	**هياكل بيانات** **Data Structures**	**Module Delivery**
Module Type	Core	☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☒ **Practical** ☐ **Seminar**
Module Code	CyB 202	
ECTS Credits	6	
SWL (hr/sem)	175	

Module Level	UG	**Semester of Delivery**	1
Administering Department	CyB	**College**	CSIS
Module Leader		**e-mail**	
Module Leader's Acad. Title	Assist lec.	**Module Leader's Qualification**	PHD
Module Tutor	Atman Dhiya Abdulsatar	**e-mail**	Athman.dhiya@uobasrah.edu.iq
Peer Reviewer Name	Name	**e-mail**	E-mail

Scientific Committee Approval Date	/0/2023	**Version Number**	1.0

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	.20 To know what meaning of data structures in computer science and it classification. .21 To understand how each data structure store in memory. .22 To understand how access to each data structure that store in memory. .23 To perform basic operation on each data structure. .24 To implemented each data structure by using any programming language.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	.1 It provides what mean of data type and data structures. .2 Identify classification of data structures and the main operation of them. .3 Identify on arrays and discuss the features, main operations, how access to each element and how implementation in java. .4 Identify on how representation strings and how create string object in pyhon.

	.5 Identify on linked lists and discuss the features, main operations, types and how implementation in java. .6 Identify on stacks and discuss the features, main operations, applications, how implementation in pyhon using arrays and linked lists. .7 Discuss how conversation and evaluation the expression using stack. .8 Learn how write implantation recursion function by using stack. .9 Identify on queues and discuss the features, main operations, applications, how implementation in python using arrays and linked lists.
Indicative Contents المحتويات الإرشادية	Many points will be covered such as: .1 Introduction to Data Structures (Definition and importance of data structures, Basic terminology: data, information, algorithm, etc. , Overview of different types of data structures). .2 Arrays (Definition and properties, Array operations: access, insertion, deletion, Multi-dimensional arrays). .3 Linked Lists (Singly linked lists, doubly linked lists, circular linked lists, Basic operations: insertion, deletion, traversal, Applications of linked lists). .4 Stacks (Definition and properties, Operations: push, pop, peek, Implementation using arrays and linked lists, Applications of stacks). .5 Queues (Definition and properties, Operations: enqueue, dequeue, front, rear, Implementation using arrays and linked lists, Types of queues (e.g., circular queue, priority queue). .6 Trees (Binary trees, binary search trees (BST), Tree traversal: in-order, pre-order, post-order, Operations on binary trees: insertion, deletion, searching). .7 Graphs (Definition and basic terminology (vertices, edges), Types of graphs (directed, undirected, weighted), Graph representation , (adjacency matrix, adjacency list). .8 Hashing (Hash functions and their properties, Collision resolution techniques, Applications of hashing).

	9. Sorting (Comparison-based sorting algorithms (e.g., bubble sort, selection sort, insertion sort, merge sort, quicksort), Non-comparison-based sorting (e.g., counting sort, radix sort). 10. Searching (Linear search, binary search, Searching in trees and graphs). 11. Advanced Data Structures (Heaps and priority queues, Disjoint-set data structure (Union-Find), Trie data structure, B-trees). 12. Algorithm Analysis (Time complexity and space complexity analysis, Big-O notation, Best, average, and worst-case analysis). 13. Dynamic Programming (Principles of dynamic programming, Memoization and tabulation, Examples of dynamic programming problems). 14. Greedy Algorithms (Principles of greedy algorithms, Examples of greedy algorithmic problems). 15. Graph Algorithms (Shortest path algorithms (Dijkstra's, Bellman-Ford). , Minimum spanning tree algorithms (Prim's, Kruskal's).

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 and the lab, interactive tutorials, and by considering types of simple experiments involving some sampling activities that are interesting to the students. Different strategies will be utilized to encourage students participation and enhance learning abilities such as (class participation, quizzes, projects, and presentations).

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا			
Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	5.13	**Structured SWL (h/sem)** الحمل الدراسي المنتظم للطالب خلال الفصل	77
Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	4.86	**Unstructured SWL (h/sem)** الحمل الدراسي غير المنتظم للطالب خلال الفصل	73
		Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**175**

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	1	10% (10)	5	LO #3- #5 and #7
	Assignments	2	10% (10)	3 and 7	LO #8, #9
	Projects / Lab.	1	10% (10)	14	LO #3- #9
	Report	1	10% (10)	-	
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #6
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
١	

Week 1	Introduction- **Types of Data types, type of data structures**
Week 2	Arrays DS: definition, features, logic, physical structure, access equations of one dimensional array.
Week 3	Arrays DS: logic, physical structure, access equations of two dimensional arrays.
Week 4	Arrays DS: logic, physical structure, access equation of three and multi-dimensional arrays and triangle arrays.
Week 5	Strings DS: definition, basic representations in memory, create String object
Week 6	Linked Lists DS: definition, advantage and disadvantage of arrays and linked lists, basic operations of linked lists, types of linked lists.
Week 7	**Mid-term Exam**
Week 8	Implementation of linked lists
Week 9	Stack DS: definition, features, implementation using linked lists and Arrays
Week 10	Stack DS: Application-recursion
Week 11	Stack DS: Application- Expression Conversion
Week 12	Stack DS: Application- evaluating expressions
Week 13	Queue DS: definition, features, implementation using linked lists
Week 14	Queue DS: definition, features, implementation using Arrays
Week 15	Queue DS: types of queues
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Arrays classes in pyhon package

Week 2	Tasks in Arrays
Week 3	Strings methods in python package
Week 4	Tasks in Strings
Week 5	**1st Quiz**
Week 6	Linked Lists class in pyhon package
Week 7	Tasks in linked lists (single and circular linked lists)
Week 8	Tasks in linked lists (double and Circular Double Linked Lists)
Week 9	Stack class in python package
Week 10	Stack to evaluate expression
Week 11	**2nd Quiz**
Week 12	Stack class in python package
Week 13	Implement queue using arrays
Week 14	Implement queue using linked lists
Week 15	Excercises of queue

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	1. Data Structures and Algorithms in Java by Michael T. Goodrich, 2022. 2. A Textbook of Data Structures and Algorithms by G. A. Vijayalakshmi Pai, 2022	No
Recommended Texts	1. Hands-On Data Structures and Algorithms with Python by Dr. Basant Agarwal, 2022	No

Websites	

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.

2. MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information

معلومات المادة الدراسية

Module Title	**Object Oriented Programming I**	**Module Delivery**
Module Type	Core	☒ **Theory**
Module Code	CyB 201	☒ **Lecture**
ECTS Credits	7	☒ **Lab**
SWL (hr/sem)	175	☐ **Tutorial** ☒ **Practical** ☐ **Seminar**

Module Level	UG	**Semester of Delivery**	1
Administering Department	CyB	**College**	CSIS
Module Leader		**e-mail**	
Module Leader's Acad. Title	Assist Proff	**Module Leader's Qualification**	PHD
Module Tutor	Name (if available)	**e-mail**	E-mail
Peer Reviewer Name	Name	**e-mail**	E-mail
Scientific Committee Approval Date	/0/2023	**Version Number**	1.0

Relation with other Modules

العلاقة مع المواد الدراسية الأخرى

Prerequisite module	None	**Semester**	
Co-requisites module		**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	.25 Introduce the concepts of object-oriented programming in a higher-level programming language, such Java .26 Analyze a problem statement to design a model of objects necessary to create software architecture. .27 Gain skills in designing, and programming software for reuse of code. .28 Establish development methods in object-oriented programming to qualify students for teaching the language in other settings.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	.1 Identify what mean of object-oriented programming and structural programming. .2 Learn the basic of java programming language: structure, data type, input and output statement. .3 Identify on control statements and define arrays and how to access to elements .4 Identify on how to write method and call it in java. .5 Understand and practical mastery of object-oriented concepts such as classes, objects. .6 Identify on access modifies .7 Identify on data abstraction, methods overriding, method overloading. .8 Understand inheritance concept, types and how implements of it. .9 Understanding polymorphism concept, types. .10 Identify on abstract class and interface.
Indicative Contents المحتويات الإرشادية	• Introduction to OOP • Java basics • Classes, objects • Constructors Strings • Inheritance concept • This and supper • Overloading and overriding

	• Access modifiers • Polymorphism concept • Abstraction concepts • Encapsulation concept • Abstract class and interface

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted in this module through a series of lectures the theoretical underpinnings of meaning of object oriented programming language (such as java) and it concepts. This will be achieved through of theoretical lectures in classes and projects in lab, there many assessment that increase the activities and understanding of students: 1. There are a number of quizzes that assess the student's competency in end of each topic. 2. There is a midterm class test. 3. There are take-home mini-projects by a team of 2 students. 4. There are end-of-semester exam test.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	77	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5.13
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	98	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6.3
Total SWL (h/sem)			**175**

الحمل الدراسي الكلي للطالب خلال الفصل	

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	4 and 8	LO #2- #5
	Assignments	2	10% (10)	6 and 10	LO #7, #9
	Projects / Lab.	1	20% (20)	14	LO #2- #10
	Report	-	-	-	-
Summative assessment	Midterm Exam	2hr	10% (10)	8	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction: What is Object-oriented programming (OOP), what is the structure of object-oriented programming? What are the main concepts of OOP? What are the benefits of OOP? Program template for Java programs, identifier, basic data types, variables and constant.
Week 2	Class Declaration Object Creation

	Constructors, overloading Constructor
Week 3	in Classes Exercises
Week 4	variable types, this keyword and method overloading and type Promotion(casting)
Week 5	Inheritance, definition, types, super keyword
Week 6	in Inheritance Exercises
Week 7	Method Overriding and access modifiers
Week 8	Mid-term Exam
Week 9	Encapsulation concept
Week 10	Polymorphism , definition, types
Week 11	in polymorphism and Encapsulation Exercises
Week 12	Abstraction: abstract class
Week 13	in abstraction Exercises
Week 14	interface concept, implement and extends with interface
Week 15	in interface Exercises
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Java and NetBeans
Week 2	Arrays
Week 3	Overloading method
Week 4	Classes and object

Week 5	**1st Quiz**
Week 6	Classes and constractor
Week 7	Access modifier
Week 8	Inheritance
Week 9	Super keyword
Week 10	Overridden method
Week 11	**2nd Quiz**
Week 12	Abstract class
Week 13	Interface
Week 14	All OOP Concepts
Week 15	

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	A. Puntambekar. (2020). Object oriented programming,	No
Recommended Texts	[1] C. Thomas Wu (2010). An Introduction to Object-Oriented Programming with Java. Fifth Edition. McGraw-Hill. [2] Herbert Schildt (2007). Java: The Complete Reference. Seventh Edition. McGraw-Hill.	No
Websites		

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.

3.Course Description Form

1. Course Name:
Static Websites Programming
2. Course Code:
CyB 205
3. Semester / Year:
2ND year

4. Description Preparation Date:	
10/9/2025	
5. Available Attendance Forms:	
Daily Attendance Sheet	
6. Number of Credit Hours (Total) / Number of Units (Total):15	
7. Course administrator's name (mention all, if more than one name)	
Name: Lamia Ali Abdulzahra Email:lamia.ali@uobasrah.edu.iq	
8. Email: Course Objectives	
Course Objectives	The objectives of this program are to: • **Build Foundational Web Development Skills** o Provide students with a strong understanding of HTML, CSS, and JavaScript as the core building blocks of modern web development. • **Enable Practical Application** o Equip students to design, develop, and publish functional, interactive, and visually appealing websites. • **Promote Best Practices** o Develop awareness of web standards, accessibility guidelines, responsive design principles, and coding conventions. • **Foster Problem-Solving and Creativity** o Encourage students to apply logical thinking and creativity in solving design and programming challenges. • **Prepare for Advanced Learning and Careers** o Lay the groundwork for advanced courses in web technologies, software development, and related fields. o Provide transferable skills relevant to the professional

	world, such as teamwork, critical thinking, and digital literacy.
9. Teaching and Learning Strategies	
Strategy	The *Web Programming I* course adopts a variety of teaching and learning strategies to ensure students develop both theoretical understanding and practical skills: 1. **Lectures (Theory Delivery)** ○ Provide foundational knowledge of HTML, CSS, and JavaScript. ○ Use multimedia presentations and live coding demonstrations. 2. **Hands-On Laboratory Sessions** ○ Conduct practical exercises in computer labs to apply lecture concepts. ○ Guide students through coding tasks, debugging, and small projects. 3. **Project-Based Learning (PBL)** ○ Assign individual and group projects (e.g., building a personal portfolio site). ○ Encourage creativity, problem-solving, and application of best practices. 4. **Active and Collaborative Learning** ○ Use pair programming, group discussions, and peer code reviews. ○ Encourage teamwork and knowledge sharing. 5. **E-Learning and Online Resources** ○ Integrate Learning Management Systems (LMS) for assignments, quizzes, and resources. ○ Provide supplementary tutorials, coding sandboxes (e.g., CodePen, JSFiddle), and video lessons. 6. **Formative Assessments and Feedback** ○ Use short quizzes, coding exercises, and in-class activities for continuous evaluation. ○ Provide timely feedback to help students improve progressively. 7. **Self-Directed Learning** ○ Encourage students to explore web development tools, online documentation, and communities. ○ Promote independent problem-solving and lifelong learning habits. 8. **Demonstrations and Case Studies** ○ Showcase real-world websites and applications to highlight best practices.

	Analyze case studies of good vs. poor web design and coding practices. ○

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Understand course overview and web development basics	Introduction to Web Programming & Internet Concepts	Lecture + Discussion	Participation
2	3	Describe HTML structure and basic tags	HTML Basics: Elements, Headings, Paragraphs, Links	Lecture + Lab	Quiz + Lab exercises
3	3	Create structured web pages with lists, images, and tables	HTML Lists, Images, Tables	Lecture + Lab	Lab exercises
4	3	Implement forms and input controls	HTML Forms and Input Elements	Lecture + Lab	Lab exercises + Quiz
5	3	Apply CSS styling to HTML elements	CSS Basics: Selectors, Properties, Colors	Lecture + Lab	Lab exercises
6	3	Design page layout using CSS	CSS Box Model, Margins, Padding, Borders	Lecture + Lab	Lab exercises

7	3	Implement advanced CSS styling and positioning	CSS Positioning, Flexbox, Grid	Lecture + Lab	Lab exercises + Quiz
8	3	Apply learned concepts in a small project	Midterm Project: Simple Web Page	Project-Based Learning	Midterm Project Evaluation
9	3	Add interactivity with JavaScript	JavaScript Basics: Variables, Data Types, Operators	Lecture + Lab	Lab exercises
10	3	Control program flow using conditions and loops	JavaScript: Conditionals & Loops	Lecture + Lab	Lab exercises
11	3	Manipulate web page elements dynamically	JavaScript DOM Manipulation	Lecture + Lab	Lab exercises
12	3	Handle events and validate forms	JavaScript Events & Form Validation	Lecture + Lab	Lab exercises + Quiz
13	3	Apply functions and arrays in JavaScript	JavaScript Functions & Arrays	Lecture + Lab	Lab exercises
14	3	Integrate HTML, CSS, and JavaScript in a full project	Capstone Project Development	Project-Based Learning	Project Progress Evaluation

15	3	Present final projects and review all topics	Capstone Project Presentation & Course Review	Presentation + Discussion	Final Project Evaluation + Participation

11. Course Evaluation
• Continuous Assessment: Quizzes and lab exercises are conducted weekly to provide timely feedback and track progress. • Project-Based Assessment: Both midterm and final projects assess students' ability to integrate theory into practical web development tasks. • Participation: Students are encouraged to actively engage in labs, discussions, and peer reviews. • Flexibility: Evaluation methods may be adjusted to suit online or blended learning environments, ensuring fairness and accessibility.

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	**"JavaScript for Modern Web Development: Building a Web Application Using HTML, CSS, and JavaScript"** *Publisher:* Skillsoft, 2020 *Overview:* Complete guide for learning web development from basics to building a web application using HTML, CSS, and JavaScript.
Recommended books and references (scientific journals, reports...)	**"JavaScript: The Definitive Guide, 7th Edition"** *Author:* David Flanagan *Publisher:* O'Reilly Media, 2020 *Overview:* Complete reference for JavaScript covering the latest features and best practice
Electronic References, Websites	**W3Schools** *Description:* Educational website with interactive tutorials and examples for HTML, CSS, and JavaScript. *Link:* W3Schoos

نموذج وصف المقرر4

1. اللغة العربية					
2. رمز المقرر					
3. الفصل الثاني/ 2025					
4. 2025/9/10					
5. أشكال الحضور المتاحة					
6. عدد الساعات الدراسية (30)/ عدد الوحدات(15)					
7. اسم مسؤول المقرر الدراسي (إذا أكثر من أسم يذكر)					
الاسم: هديل سالم كاطع			**الايميل:**hadeal.kataa@uobasrah.edu.iq		
8. اهداف المقرر					
اهداف المادة الدراسية			إكساب الطلبة المعارف و المعلومات المناسبة في اللغة العربية وآدابها، وتنمية الذائقة اللغوية و الأدبية لدى الطلبة على مايسمعون أو يقرؤون وكذلك تعزيز مهارات البحث العلمي في مجالات اللغة و الأدب، إضافة إلى إكساب الطلاب مهارات التعبير بالفصحى ،وتنمية الاتجاهات والقيم الإيجابية لدى الطلاب نحو لغتهم العربية المرتبطة بالدين والتراث العربي.		
9. استراتيجيات التعليم والتعلم					
الاستراتيجية			1-القاء المحاضرات بشكل تفصيلي. 2- كتابة التقارير. 3-مناقشة يومية لمعرفة مدى استيعاب الطلبة للمادة ووضع تقييم للمشاركات اليومية. 4-امتحانات يومية (كوزات) و امتحانات شهرية للمنهج الدراسي والامتحان النهائي.		
10. بيئة المقرر					
الأسبوع	**الساعات**	**مخرجات التعلم المطلوبة**	**اسم الوحدة او الموضوع**	**طريقة التعلم**	**طريقة التقييم**

15	2	مخرجات التعلم لمادة اللغة العربية تهدف إلى تطوير مجموعة من المهارات و المعرفة لدى الطلاب، ادناه بعض مخرجات التعلم الرئيسية بعد انتهاء دراسة هذه المادة: 1-شرح القواعد الأساسية للكتابة في مادة اللغة العربية. 2-تطبيق المعارف اللغوية بمهارة ويسر 3-تحليل التراكيب اللغوية والنصوص البسيطة التي يستعملها في حياته اليومية 4-معالجة الاخطاء البسيطة لديه	**اللغة العربية**	1-القاء المحاضرات بشكل تفصيلي. 2- كتابة التقارير. 3-مناقشة يومية لمعرفة مدى استيعاب الطلبة للمادة ووضع تقييم للمشاركات اليومية.	-امتحانات يومية (كوزات) و امتحانات شهرية للمنهج الدراسي والامتحان النهائي.

11. تقييم المقرر	
12. مصادر التعلم والتدريس	
الكتب المقررة المطلوبة (المنهجية ان وجدت)	
المراجع الرئيسية (المصادر)	شرح ابن عقيل،ديوان المتنبي،تاريخ الادب العربي
الكتب والمراجع الساندة التي يوصى بها (المجلات العلمية، التقارير ...)	شرح ابن عقيل،ديوان المتنبي،تاريخ الادب العربي
المراجع الإلكترونية، مواقع الأنترنت	

5.MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information

معلومات المادة الدراسية			
Module Title	**Computation Theory**	**Module Delivery**	
Module Type	Core	☒ **Theory**	
Module Code	CyB 203	☒ **Lecture**	
ECTS Credits	5	☐ **Lab**	
SWL (hr/sem)	125	☐ **Tutorial**	
		☐ **Practical**	
		☐ **Seminar**	
Module Level	UG	**Semester of Delivery**	1
Administering Department	CyB	**College**	CSIS
Module Leader		**e-mail**	
Module Leader's Acad. Title	Assist Proff	**Module Leader's Qualification**	PHD
Module Tutor	Name (if available)	**e-mail**	E-mail
Peer Reviewer Name	Name	**e-mail**	E-mail
Scientific Committee Approval Date		**Version Number**	1.0

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	29. Understand the abstract model of computation. 30. Understand the formal reasoning and the ability to build a base for solving problems. 31. The ability to understand the problems and find if they can solved using computation. 32. Understand the computation models, and their properties. 33. Learn the necessary mathematical techniques to prove the attributes of the computation models. 34. The ability to express the problems mathematically and find the proof to solve them. 35. Explore different (current and future) topics in the field of computation theory.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	11. Explain the basic concepts in computational theory through a set of tools. 12. Acquiring skills in addressing the mathematical problems and proof the solution. 13. Acquiring basic skills as an introduction to language construction. 14. Acquiring theoretical concepts to deal with (RE's, DFA's, NFA's, Stack's, Turing machines, and Grammars). 15. The ability to design (FAs, NFAs, Grammars, language modeling, small compilers basics). 16. The ability to think about addressing the problem according to certain rules. 17. The ability to distinguish between Natural and Formal Languages. 18. The logical thinking to formulate the problems and solutions.
Indicative Contents المحتويات الإرشادية	

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: - Readings, self-learning, discussion panels. - Exercises and activities in the classroom. - Directing students to some websites to benefit from them to develop their capabilities. - Holding research seminars through which some problems are explained and analyzed and the mechanism for finding solutions to them.

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا

4.1	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	62	**Structured SWL (h/sem)** الحمل الدراسي المنتظم للطالب خلال الفصل
4.2	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	63	**Unstructured SWL (h/sem)** الحمل الدراسي غير المنتظم للطالب خلال الفصل
125			**Total SWL (h/sem)** الحمل الدراسي الكلي للطالب خلال الفصل

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	20% (20)	2 and 12	LO #2, #4 and #5, #8
	Projects / Lab.	-	-	-	-
	Report	1	10% (10)	13	LO #1, #3, #6 and #7
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	Introduction to languages (set,string,alphabets, language).
Week 2	Introduction to FAs (Finite state automata).
Week 3	FAs (Types of NFAs,DFAs and equivalence between NFAs and DFAs, FAs with epsilon move).
Week 4	Introduction to Regular Expressions.
Week 5	Regular Expressions (Pumping lemma on regular languages, closure properties of regular languages).
Week 6	FAs with outputs (Finite State Automata with output(Mealy and Moore) Machine).
Week 7	FAs with outputs (Equivalence between Moore and Mealy Machine).
Week 8	Represent REs, FAs, TGs (leens Theorem)
Week 9	Introduction to CFGs (Context Free Grammar and Languages)
Week 10	CFGs (Context Free Grammar without empty string).

Week 11	CFGs (Derivation Tree (LMD,RMD), Simplification of CFGs).
Week 12	CFGs (Chomsky and Greibach normal form).
Week 13	CFGs (The ambiguous CFGs).
Week 14	Pushdown automata and CFL, closure properties of CFL(union,concatenation,kleen closure)
Week 15	Turing Machine
Week 16	**Exam**

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	**Available in the Library?**
Required Texts	**Introduction to the Theory of Computation (3rd Edition), by Michael Sipser.**	No
Recommended Texts	**An Introduction to Formal Languages and Automata (6th Edition), by Peter Linz.**	No
Websites		

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	**FX –** Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
(0 – 49)	**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.

6.MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية			
Module Title	**Database Basics**	**Module Delivery**	
Module Type	Core		☒ **Theory**
Module Code	CyB 204		☒ **Lecture**
ECTS Credits	6		☒ **Lab**
SWL (hr/sem)	150		☐ **Tutorial** ☒ **Practical** ☐ **Seminar**
Module Level	UG	**Semester of Delivery**	1
Administering Department	CyB	**College**	CSIS

Module Leader		**e-mail**	
Module Leader's Acad. Title	Assist Proff	**Module Leader's Qualification**	PHD
Module Tutor	Name (if available)	**e-mail**	E-mail
Peer Reviewer Name	Name	**e-mail**	E-mail
Scientific Committee Approval Date	/0/2023	**Version Number**	1.0

Relation with other Modules

العلاقة مع المواد الدراسية الأخرى

Prerequisite module	None	**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. Understand the structure of Database and database users. 2. Learning the Database concepts and database architecture. 3. The ability to implement data modeling with ER model, 4. Understand the relational model, database language and management systems. 5. Learn the relational data model, constraints (integrity), and relational algebra. 6. Learn the basics of SQL language. 7. Understand the database design, theory and methodology. 8. Learn different concepts such as (functional dependencies and normalization, relational database design algorithm).

Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Describe database concepts and architecture including query processing and optimization, concurrency controls and database recovery. 2. Identify database requirements and constraints to solve a business problem. 3. Design logical and mathematical models to organize data within a database. 4. Develop databases and execute queries using SQL. 5. Analyze functional dependencies and apply normalization rules to minimize redundancy. 6. Develop skills to work in a group project to produce quality deliverables. 7. Develop skills to structure themselves to work in a cohesive manner.
Indicative Contents المحتويات الإرشادية	• Introduction to Databases • Conceptual Database Design • Entity Relationship Diagram • Enhanced ER (EER) Model Concepts (ERD) • Relational Data Model and Relational Database Constraints • Relational Algebra • Normalization • Structured Query Language (SQL) • Advanced SQL • File Structure and Indexes • Database Performance Issues

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 and the lab, interactive tutorials, and by considering types of projects, reports, quizzes and presentations.

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا

Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	5.13	**Structured SWL (h/sem)** الحمل الدراسي المنتظم للطالب خلال الفصل	77
Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	4.68	**Unstructured SWL (h/sem)** الحمل الدراسي غير المنتظم للطالب خلال الفصل	73
		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	20% (20)	4 and 12	LO #1- #4 and #7
	Assignments	2	10% (10)	6 and 12	LO #4, and #5
	Projects / Lab.	1	10% (10)	14	LO #1- #7
	Report	-	-	-	-
Summative assessment	Midterm Exam	2hr	10% (10)	9	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction to Databases
Week 2	Conceptual Database Design
Week 3	Entity Relationship Diagram (ERD)
Week 4	Enhanced ER (EER) Model Concepts
Week 5	Relational Data Model and Relational Database Constraints
Week 6	Relational Algebra**-- 1st Assignment**
Week 7	Structured Query Language (SQL)
Week 8	Advanced SQL
Week 9	**Midterm Exam**
Week 10	Normalization
Week 11	File Structure and Indexes
Week 12	Database Performance Issues **-**
Week 13	**2nd Assignment**
Week 14	**Mini-project evaluation**
Week 15	Review and Exam Preparation: a review of key topics and concepts, exam practice, and preparation
Week 16	**Final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Introduction to MS-Access

Week 2	Tables Design
Week 3	Tables Relationships
Week 4	Forms
Week 5	**1st Quiz**
Week 6	Queries1
Week 7	Queries2
Week 8	Mini-Project Projects Evaluation
Week 9	Reports
Week 10	**2nd Quiz**
Week 11	Switchboard and user interface
Week 12	Macro's and VBA
Week 13	Finalizing Database System
Week 14	Final-Project Projects Evaluation
Week 15	

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	[1] Kroenke, David, and David J. Auer. Database concepts. Prentice Hall, 2013. [2] Silberschatz, Abraham, Henry F. Korth, and S. Sudarshan. Database system concepts. 4th edition. Hightstown: McGraw-Hill, 2002 ISBN 0-07-255481-9.	No

	Elmasri, Ramez., Fundamentals of database systems / Ramez Elmasri, Shamkant B. Navathe.—6th ed.,p. cm. ISBN-13: 978-0-136-08620-8 [3]	
Recommended Texts	Bagui, S. & Earp, R (2004). Learning SQL A Step-by-Step Guide Using Access®. Addison-Wesley Publishing. ISBN: 0-32-111904-5.	No
Websites		

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
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	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.

The curricula for the third stage of the first semester.

1.MODULE DESCRIPTION FORM

Module Information معلومات المادة الدراسية			
Module Title	Advanced Cryptography	Module Delivery	
Module Type	Core	☒ Theory ☒ Lecture ☐ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	CyB304		
ECTS Credits	4		
SWL (hr/sem)	100		
Module Level	UG	Semester of Delivery	1
Administering Department	Type Dept. Code	College	Type College Code
Module Leader	Name	e-mail	E-mail
Module Leader's Acad. Title	Professor	Module Leader's Qualification	Ph.D.
Module Tutor	Name (if available)	e-mail	E-mail
Peer Reviewer Name	Name	e-mail	E-mail
Scientific Committee Approval Date	15/09/2025	Version Number	1.0

Relation with other Modules العلاقة 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	This course provides students with the most common cryptographic algorithms and protocols and how to use cryptographic algorithms and protocols to secure distributed applications and computer networks: • Explain the objectives of information security. • Explain the importance and application of each of confidentiality, integrity, authentication and availability. • Understand various cryptographic algorithms. • Understand the basic categories of threats to computers and networks.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	By the end of the course, students will be able to: • Understand the Cryptography principles and types. • Describe the computer systems security issues. • Student will be able to understand basic cryptographic algorithms, message and security issues. • Ability to identify information system requirements for both of them, such as, client and server. • Ability to understand the current issues towards information security. • Apply security principles to system design.
Indicative Contents المحتويات الإرشادية	• Block Ciphers and the Data Encryption Standard. - Block Cipher Principles. - Differential and Linear Cryptanalysis. - Block Cipher Modes of Operation. • Advanced Encryption Standard. • Stream Cipher. • Asymmetric Ciphering: Public Key Cryptography, RSA. • Asymmetric Ciphering: Public Key Cryptography, Diffie-Hellman Key Exchange. • Asymmetric Ciphering: Public Key Cryptography, Elgamal Cryptographic system.

	• Asymmetric Ciphering: Public Key Cryptography, Elliptic Curve Cryptography. • Asymmetric Ciphering: Public Key Cryptography, Diffie-Hellman Key Exchange. • Cryptography Data Integrity: Hash Function. • Cryptography Data Integrity: Two Simple Hash Function. • Cryptography Data Integrity: Secure Hash Algorithm (SHA-3). • Cryptography Data Integrity: Message Authentication Codes. • Digital Signature: Elgamal Digital Signature Schame. • Digital Signature: Schnorr Digital Signature Schame + NIST DSS. • Digital Signature: Elliptic Curve Digital Signature Schame. • Digital Signature: RSA-PSS Digital Signature Schame.

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	Type something like: 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

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	45	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	55	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	3	24% (24)	3,6,9	LO #1, 2, 10 and 11
	Assignments	2	6% (6)	2, 12	LO # 3, 4, 6 and 7
	Projects	5	5%(5)	4	Continuous

	Report	1	5% (5)	13	LO # 5, 8 and 10
Summative assessment	Midterm Exam	1 hr	10% (10)	7	LO # 1-7
	Final Exam	2 hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الأسبوعي النظري	
	Material Covered
Week 1	Block Ciphers and the Data Encryption Standard.
Week 2	Data Encryption Standard.
Week 3	Avalanche Effect.
Week 4	Modes of Operation: CTR.
Week 5	Rijndael Cipher.
Week 6	AES Key Expansion.
Week 7	Stream Cipher.
Week 8	Asymmetric Ciphering: Public Key Cryptography, RSA.
Week 9	Asymmetric Ciphering: Public Key Cryptography, Diffie-Hellman Key Exchange.
Week 10	Asymmetric Ciphering: Public Key Cryptography, Elgamal Cryptographic system.
Week 11	Asymmetric Ciphering: Public Key Cryptography, Elliptic Curve Cryptography.
Week 12	Asymmetric Ciphering: Public Key Cryptography, Diffie-Hellman Key Exchange.
Week 13	Cryptography Data Integrity: Hash Function.
Week 14	Cryptography Data Integrity: Two Simple Hash Function.
Week 15	Cryptography Data Integrity: Message Authentication Codes.
Week 16	Preparatory week before the final Exam.

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered

Week 1	لايوجد مختبر
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	**William Stallings, "Cryptography and Network Security. Principle and Practice", Fourth Edition, Principle Hall, USA, 2006.**	No
Recommended Texts	**Alfred J. Menezes, Paul C. van Oorschot and Scott A. Vanstone, "Handbook of Applied Cryptography", Fifth Edition , CRC Press, 2001.**	No
Websites		

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.

2.MODULE DESCRIPTION FORM

Module Information
معلومات المادة الدراسية

Module Title	Artificial Intelligence		**Module Delivery**
Module Type			☐ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**
Module Code			
ECTS Credits			
SWL (hr/sem)	3		
Module Level		**Semester of Delivery**	
Administering Department	Cyber security department	**College**	Collage of computer science and information technology
Module Leader	Athman Dhiya Abdulsatar	**e-mail**	
Module Leader's Acad. Title	Assistant lecturer	**Module Leader's Qualification**	Master degree
Module Tutor	Athman Dhiya Abdulsatar	**e-mail**	Athman.dhiya@uobasrah.edu.iq
Peer Reviewer Name	Athman Dhiya Abdulsatar	**e-mail**	Athmanabdulsatar@gmail.com
Scientific Committee Approval Date		**Version Number**	**07726259220**

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 Aims أهداف المادة الدراسية	• Explain the foundations, history, and applications of AI. • Model intelligent agents and apply problem-solving and search strategies. • Implement adversarial search and logical reasoning methods. • Apply probabilistic reasoning, planning, and decision-making under uncertainty. • Understand key machine learning techniques and neural networks. • Explore applications in NLP, computer vision, and robotics. • Evaluate the ethical and societal impacts of AI.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Explain the foundations, history, evolution, and real-world applications of artificial intelligence. 2. Describe intelligent agents, their architectures, environments, and performance evaluation. 3. Apply search and problem-solving techniques, including uninformed, informed, and adversarial search. 4. Represent knowledge and perform logical and probabilistic reasoning under uncertainty. 5. Implement machine learning models, including supervised, unsupervised, and neural networks. 6. Demonstrate understanding of AI applications in NLP, computer vision, and robotics. 7. Analyze ethical, safety, fairness, privacy, and societal impacts of AI technologies.
Indicative Contents المحتويات الإرشادية	• **Foundations of AI** – Definition, history, evolution, and applications. • **Intelligent Agents** – Architectures, environments, rationality, and performance measures. • **Problem-Solving & Search** – Uninformed search (BFS, DFS, UCS) and informed search (Greedy, A*). • **Adversarial Search** – Game playing, Minimax, and Alpha-Beta pruning. • **Knowledge Representation & Reasoning** – Propositional logic, first-order logic, inference methods. • **Reasoning under Uncertainty** – Probability, Bayesian networks, Hidden Markov models. • **Planning** – Classical planning (STRIPS, forward/backward search, partial-order planning). • **Machine Learning** – Supervised vs. unsupervised learning, decision trees, clustering, dimensionality reduction. • **Artificial Neural Networks** – Perceptrons, multilayer networks, backpropagation. • **Advanced Applications** – Basics of NLP, computer vision, and robotics. • **Ethics & Societal Impact** – Fairness, safety, transparency, privacy, and global implications of AI.

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	• **Lectures & Interactive Discussions** – Introduce AI foundations, algorithms, and applications with real-world examples and class debates. • **Problem-Solving Sessions** – In-class exercises on search, logic, probability, and planning to strengthen analytical skills.

	• **Hands-on Labs & Tutorials** – Implement AI algorithms (e.g., BFS, A*, decision trees, neural networks) using Python or related tools. • **Quizzes & Assignments** – Short assessments to reinforce key ideas and encourage continuous learning. • **Case Studies & Applications** – Analyze real-world AI systems in healthcare, NLP, robotics, and computer vision. • **Group Projects / Mini-Projects** – Collaborative work on designing and presenting a small AI application. • **Seminars & Reflection** – Discussions on ethical, social, and global impacts of AI.

Student Workload (SWL)
الحمل الدراسي للطالب

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

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	1	10	Week 5	
	Assignments	2	10	Week 2 &7	
	Seminar	1	10	Week 12	
	Report	1	10	Week 13	
Summative assessment	Midterm Exam	1	10	Week 8	
	Final Exam	1	50		
Total assessment			100		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	• Introduction to Artificial Intelligence • Definition, history, and evolution of AI • Real-world applications of AI
Week 2	• Intelligent Agents

	• Agent architectures and environments • Performance measures and rationality
Week 3	• Problem Solving with Search • Uninformed search strategies: BFS, DFS, Uniform-Cost Search
Week 4	• Informed Search Strategies • Greedy Search, A* Algorithm • Heuristics and optimization in search
Week 5	• Adversarial Search • Game playing, Minimax algorithm • Alpha-Beta pruning for efficiency
Week 6	• Knowledge Representation I • Propositional logic • First-order logic: syntax and semantics
Week 7	• Knowledge Representation II • Inference in first-order logic • Resolution and Unification
Week 8	• Review + Midterm Exam
Week 9	• Reasoning under Uncertainty • Probability basics • Bayesian Networks • Hidden Markov Models
Week 10	• Planning • STRIPS • Forward and backward state-space planning • Partial-order planning
Week 11	• Machine Learning I • Introduction to learning • Supervised learning • Decision trees
Week 12	• Machine Learning II • Unsupervised learning • Clustering (k-means) • Dimensionality reduction • Artificial Neural Networks
Week 13	• Advanced Topics & Applications • Introduction to Natural Language Processing (NLP) • Computer Vision • Overview of Robotics
Week 14	• Ethics and Future of AI • Safety, fairness, privacy, explainability, global impact
Week 15	• Review before Final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	
Week 8	

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	by Artificial Intelligence - A Modern Approach Fourth Edition *Stuart Russell & Peter Norvig*	
Recommended Texts		
Websites	https://www.deeplearning.ai/short-courses/ai-python-for-beginners/	

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.

3.MODULE DESCRIPTION FORM

Module Information
معلومات المادة الدراسية

Module Title	web security	**Module Delivery**	
Module Type		☐ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code			
ECTS Credits			
SWL (hr/sem)			
Module Level		**Semester of Delivery**	
Administering Department		**College**	University of basrah
Module Leader		**e-mail**	nabawq12@gmail.com
Module Leader's Acad. Title		**Module Leader's Qualification**	
Module Tutor	م.م.نبأ ماجد حامد	**e-mail**	
Peer Reviewer Name		**e-mail**	
Scientific Committee Approval Date		**Version Number**	

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 Aims أهداف المادة الدراسية	
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	
Indicative Contents المحتويات الإرشادية	

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	1. Lectures & Discussions – Deliver theoretical concepts of web security supported with interactive discussions. 2. Case Studies – Analyze real-world web attacks (e.g., SQL Injection, XSS) and discuss prevention methods. 3. Hands-on Labs – Practical exercises on secure coding, encryption, and vulnerability testing. 4. Projects & Assignments – Develop secure web applications and conduct security assessments. 5. Group Work – Collaborative problem-solving and presentations on web security challenges. 6. Use of Tools – Introduce students to security tools such as Burp Suite, OWASP ZAP, and Wireshark. 7. Quizzes & Exams – Evaluate understanding through continuous assessment and final examination.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا		**Structured SWL (h/sem)** الحمل الدراسي المنتظم للطالب خلال الفصل	
Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا		**Unstructured SWL (h/sem)** الحمل الدراسي غير المنتظم للطالب خلال الفصل	
		Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes				
	Assignments				
	Projects / Lab.				
	Report				
Summative assessment	Midterm Exam				
	Final Exam				
Total assessment					

Delivery Plan (Weekly Syllabus)

Website security

المنهاج الأسبوعي النظري

	Material Covered
Week 1	• Introduction to Web Security • Evolution of information and web security • Difference between network security and application security • Threat modeling and attack surfaces • OWASP Top 10 overview • Legal and regulatory frameworks (GDPR, HIPAA, PCI DSS)
Week 2	• Architecture of Modern Web Applications • Client-server architecture • HTTP/HTTPS protocols in depth • Sessions, cookies, and tokens • APIs: REST, GraphQL, and security implications
Week 3	Module II: Web Attacks • Injection Attacks • SQL Injection (classic and advanced) • NoSQL Injection • Command Injection • Hands-on exploitation examples
Week 4	• Cross-Site Scripting (XSS) • Types: Reflected, Stored, DOM-Based • Exploitation techniques and detection tools (Burp Suite, OWASP ZAP) • Case studies from real-world incidents
Week 5	

	• CSRF and Session Hijacking • Cross-Site Request Forgery attacks • Session hijacking and cookie theft • Man-in-the-Middle (MITM) attacks on sessions • Mitigation: CSRF tokens, SameSite, HttpOnly, secure cookies
Week 6	• Authentication and Identity Attacks • Brute force and credential stuffing • Weak password storage and hashing flaws • Password reset vulnerabilities • OAuth 2.0 and OpenID Connect pitfalls
Week 7	• API Security • Threats against REST APIs • GraphQL-specific vulnerabilities • Rate limiting and authentication failures • OWASP API Security Top 10
Week 8	• Access Control and Authorization • Broken access control • RBAC, ABAC, PBAC models • Multi-factor authentication (MFA)
Week 9	• Database and Data Storage Security • Cryptography fundamentals (AES, RSA, hashing) • Protecting sensitive data (PII, PCI data) • Cloud storage security
Week 10	• Web Application Firewalls (WAF) & Content Security Policy (CSP) • WAF design and deployment • CSP to mitigate XSS and script injection • Practical implementation with Nginx and Cloudflare
Week 11	• Secure Development Practices • Input validation • Secure coding guidelines • Using security libraries
Week 12	• Tools for Web Security • Burp Suite, OWASP ZAP basics • Online scanners (example: OWASP Dependency-Check)
Week 13	• Penetration Testing Basics • Steps: Information gathering → Testing → Reporting • Simple demo with a test website
Week 14	• Final Project and Review • Students test a demo web application • Write a simple security report • Present findings in class

Week 14	• Student presentations of final projects. • Summary of course outcomes and future directions.

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	
Week 8	

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts		
Recommended Texts		
Websites	1. The Web Application Hacker's Handbook – Dafydd Stuttard & Marcus Pinto (2nd Edition, 2011) وامرجع كلاسيكي للهجمات والتقنيات العملية. 2. Web Application Security: Exploitation and Countermeasures for JavaScript, Node.js, and More – Andrew Hoffman (2020). 3. Black Hat Python: Python Programming for Hackers and Pentesters – Justin Seitz & Tim Arnold (2nd Edition, 2021). 4. Serious Cryptography: A Practical Introduction to Modern Encryption – Jean-Philippe Aumasson (2017). 5. Practical Web Penetration Testing – Gus Khawaja (Packt, 2018). 6. Foundations of Modern Web Security – Michael Howard (O'Reilly, 2022).	

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.

4.Course Description Form

1. Course Name:	
Mobile Applications	
2. Course Code:	
3. Semester / Year:	
1st Semester/2025	
4. Description Preparation Date:	
12/09/2025	
5. Available Attendance Forms:	
6. Number of Credit Hours (Total) / Number of Units (Total)	
3	
7. Course administrator's name (mention all, if more than one name)	
Name: Dr. Sari Ali Sari Email: sari.ali@uobasrah.edu.iq	
8. Email: Course Objectives	
Course Objectives	• Introduce students to the fundamentals of mobile applications and platforms. • Train students to design and implement interactive mobile user interfaces.

	• Develop mobile applications using Android Studio or Flutter. • Integrate applications with databases and online APIs. • Enable students to create and present a complete mobile project.
9. Teaching and Learning Strategies	
Strategy	**Lectures:** to introduce theoretical concepts and principles of mobile applications. **Laboratory Sessions:** to provide hands-on experience in developing mobile applications. **Tutorials:** to enhance problem-solving skills and provide guidance on projects. **Group Projects:** to develop teamwork, communication, and practical development skills. **Independent Study:** students are encouraged to use recommended texts, online documentation, and self-learning to deepen their understanding. **Interactive Discussions:** to stimulate critical thinking and link theoretical knowledge with practice.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3 (2T + 1L)	Understand mobile apps & platforms	Introduction to Mobile Applications	Lecture + Lab	Quiz
2	3 (2T + 1L)	Set up development environment & run app	Development Environment	Lecture + Lab	Lab exercise
3	3 (2T + 1L)	Describe app architecture & lifecycle	Mobile App Architecture	Lecture + Lab	Quiz
4	3 (2T + 1L)	Design simple UI	User Interface Design (Layouts, Widgets)	Lecture + Lab	Assignment
5	3 (2T + 1L)	Handle events & screen navigation	Event Handling & Navigation	Lecture + Lab	Quiz
6	3 (2T + 1L)	Implement local storage	Local Storage (Shared Prefs, SQLite)	Lecture + Lab	Lab work

7	3 (2T + 1L)	Apply knowledge from Weeks 1–6	Midterm Exam & Lab Test	Exam + Lab	Midterm
8	3 (2T + 1L)	Connect apps with APIs	Networking & APIs	Lecture + Lab	Lab exercise
9	3 (2T + 1L)	Work with multimedia & sensors	Multimedia & Sensors	Lecture + Lab	Assignment
10	3 (2T + 1L)	Implement background tasks & notifications	Services & Notifications	Lecture + Lab	Quiz
11	3 (2T + 1L)	Design advanced UI/UX	Advanced UI/UX Design	Lecture + Lab	Lab exercise
12	3 (2T + 1L)	Apply testing & debugging	Testing & Debugging	Lecture + Lab	Lab work
13	3 (2T + 1L)	Prepare deployment	Deployment (APK, Publishing)	Lecture + Lab	Report
14	3 (2T + 1L)	Present & evaluate projects	Final Project Presentations	Presentation	Project evaluation
15	3 (2T + 1L)	Review & wrap-up	Revision and Q&A	Interactive session	Participation

11. Course Evaluation

Component	Details	Weight (Marks)	Percentage
Continuous Assessment	Quizzes (2)	10	10%
	Assignments	10	10%
	Lab Work / Practical Activities	10	10%
	Project / Group Work (Final Presentation)	5	5%
	Report / Documentation	5	5%
Midterm Exam		10	10%
Final Exam		50	50%

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Android Programming: The Big Nerd Ranch Guide – Bill Phillips, Chris Stewart
Main references (sources)	Neil Smyth – Android Studio Development Essentials – Java Edition, Payload Media, 2020.
Recommended books and references	Flutter for Beginners – Alessandro Biessek

(scientific journals, reports...)	
Electronic References, Websites	• Android Developer Guide: https://developer.android.com/guide • Flutter Documentation: https://docs.flutter.dev

5.MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Computer Network			**Module Delivery**	
Module Type	Core			☒ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	CYS301				
ECTS Credits	6				
SWL (hr/sem)	150				
Module Level	UG		**Semester of Delivery**	1	
Administering Department	CS		**College**	CSIS	
Module Leader	Dr. Khulood A. Nassar		**e-mail**	Khulood.nassar@uobasrah.edu.iq	
Module Leader's Acad. Title	Ass. Proof.		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Name (if available)		**e-mail**	E-mail	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	151/09/2025		**Version Number**	1.0	

Relation with other Modules

العلاقة 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 Objectives أهداف المادة الدراسية	1. Introduce students to the foundational concepts, principles, and terminology of c0mputer network. This includes understanding the importance of communication and systems, networks, and the role of modern method of sending data. 2. Familiarize students with various networks, standards, and best practices that are relevant to the field of communication devices. This includes understanding sending and recivingrequirements, best protocols, and main gools of communication protocol. 3. Explore the principles and techniques of network and communication system through standard systems. 4. Provide students with knowledge of development practices and methodologies of data communication. This involves offering data transmission techniques. 5. Introduce students to the fundamentals of computer network. This includes learning how to addressing, as well as investigations of this addressing methods and preserving varabile them.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Gain a comprehensive understanding of the fundamental concepts, principles, and terminology related to computer network, including the importance of data communcation and systems. 2. Demonstrate knowledge and comprehension of various addressing methods, standards, and best practices relevant to data communication, including sending and recieving requirements. 3. Apply the principles and techniques of networks types, including understanding network architecture, communication protocols. 4. Apply software development practices and methodologies, including

	understanding common software applications. .5 Understand and apply the fundamentals of communication, including data transmission media. .6 Apply the principles and protocols of communication, including understanding subnetting methods, management, and the role of subnet the network. .7 Apply skills in managing networks, including understanding communication. .8 Understand and apply considerations associated with data communication. .9 Demonstrate awareness and understanding of emerging technologies and trends in data communication, including devices, and Internet.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. • Module 1: Introduction to computer network. [12 hrs] • Module 2: addressing. [12 hrs] • Module 3: subnetting. [12 hrs] • Module 4:network layers system. [12 hrs] • Module 5: transmission data media. [12 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/w) الحمل الدراسي المنتظم للطالب أسبوعيا	3	**Structured SWL (h/sem)** الحمل الدراسي المنتظم للطالب خلال الفصل	47
Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	6	**Unstructured SWL (h/sem)** الحمل الدراسي غير المنتظم للطالب خلال الفصل	103
		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	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	0	0% (0)	Continuous	All
	Report	2	20% (20)	13	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction to computer network
Week 2	Networks types
Week 3	Network devices
Week 4	Addressing
Week 5	Ip addressing
Week 6	Subnetting
Week 7	Maskking and ranges
Week 8	Network layers model
Week 9	OSI model
Week 10	Mid exam
Week 11	TCP model and encapsulation operation
Week 12	Pysical media
Week 13	Wire media
Week 14	Optical fiber
Week 15	Wirless media

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered

Week 1	
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Fruize W. Bahroze, " Computer networki: Principles and Arichtecture ", fifth Edition, Course Technology, New 2015. york, .	No
Recommended Texts	Peter L. Dordol . " An Introduction to Computer Networks "F Six Edition ,Printice Hill, 2022	No
Websites		

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.