MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information

معلومات المادة الدراسية

Module Title	**Calculus**			**Module Delivery**	
Module Type	**Basic**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CSC1104**				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level	1		**Semester of Delivery**	1	
Administering Department			**College**	Science	
Module Leader	Basad Al-Sarray		**e-mail**	Basad.husain@sc.uobaghdad.edu.iq	
Module Leader's Acad. Title	Assistant Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor	-		**e-mail**	-	
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date	01/06/2023		**Version Number**	1.0	

Relation with other Modules

العلاقة مع المواد الدراسية الأخرى

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1. To show the basic concepts of calculus are related with topics in computer science. 2. To understanding the fundamental theory of calculus and its applications in CS. 3. To understand general types numbers sets, function. 4. To learn computing: limits, derivative, integral, sequences, and types of problems that can be solved. 5. To perform the analysis of functions in one variable.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	After completing this course, students should have developed a clear understanding of the fundamental concepts of single variable calculus and a range of skills allowing them to work effectively with the concepts. The basic concepts are: Number sets, inequality, function, derivatives, integral, power series. After completing this course, students should demonstrate competency in the following skills: Find (domain –range) of function, analysis the symmetric property of function, Find derivative by using both the limit definition and rules of derivative. Sketch the graph of a function using asymptotes, critical points, the derivative test for increasing/decreasing functions, and concavity. Apply derivative to solve max/min problems. Use in formation in calculus to represent the functions by Taylor series
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. **Part A – Functions** Number and sets, intervals, line equation [6 hrs] Functions, types, properties, graph [10 hrs] Limit ,continuous of the functions. [10 hrs] General techniques of finding derivatives. [6 hrs] Derivatives of trigonometric function, exponential function, logarithm [9 hrs] Applications of derivatives . [15 hrs]

	Revision problem classes [6 hrs] **Part B – Integrals and sequences** Fundamentals. [15 hrs] Techniques of integrals. [7 hrs] Sequences, and series. [15 hrs]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Students are expected to use teir mathematical knowledge and practices to solve problems. This course strengthens students' understanding of functions in preparation for the process of differentiation and integration. Calculus concepts explored include limits and continuity, derivatives, definite integrals, exponential and logarithmic functions, trigonometric functions, and techniques of integration. Emphasis is placed on the exploration of real-world calculus applications. Students are expected to learn to choose and use appropriate mathematics and statistics to analyze empirical situations, to understand them better, and to improve decisions

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	48	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	3
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	102	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6.8
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)	5,9	LO#1,2,9
	Assignments	2	10% (10)	2,12	LO#3,4,6 and7
	Projects / Lab.	2	10% (10)	Continuous	
	Report	1	10% (10)	13	LO #5,8 and 10
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(Week syllabus)	
Week No.	**Martial Covered**
Week 1	Types of sets of numbers, natural, integer , rationale, and real, intervals
Week 2	Solve inequalities
Week 3	Solve inequalities defined by absolute
Week 4	Types of line equations
Week 5	Define function and its types, domain, range, graph of the functions, Rational function, Trigonometric functions, Exponential function..
Week 6	Computing limit of the functions with different types Rational function, Trigonometric functions, Exponential function.. Continuous of the functions
Week 7	Basics of computing derivative of the functions
Week 8	Midterm Exam
Week 9	Using asymptotes, critical points, the derivative test for increasing/decreasing functions, and concavity.
Week 10	Solve applied max/min problems, and to solve related rates problems.
Week 11	General definition: Definite integral, Indefinite integrals, ..
Week 12	Substitution rule of integral, integral by parts, integral by fraction
Week 13	General definition , types of sequences, Convergence test of sequences
Week 14	General definition , types of Series, Convergence test of series
Week 15	Taylor series, Fourier Series
Week 16	**Final exam**

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Book, Thomas' Calculus, Thomas, G.B., Weir, M.D.,Hass, J.R.,9780134429809 2015, Pearson Education	Yes
Recommended Texts	Larson, Ron, and Bruce H. Edwards. *Calculus*. Cengage Learning, 2022.	No

Websites	https://books.google.iq/books?id=DdtQCwAAQBAJ 5https://pdfkeys.com/download/2588723-Calculus-10th-Edition-Larson.pdf

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 is 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 DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Computer Organization**			**Module Delivery**	
Module Type	**Core**			☒**Theory** ☐**Lecture** ☒**Lab** ☐**Tutorial** ☐**Practical** ☐**Seminar**	
Module Code	**CSC1102**				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level		1	**Semester of Delivery**		1
Administering Department			**College**		
Module Leader	Name: Zainab Raed Ahmed		**e-mail**	E-mail: zainab.raid@sc.uobaghdad.edu.iq	
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	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	The objectives of studying computer organization are to provide students with a solid understanding of the internal workings of a computer system, enabling them to analyze, design, and optimize computer systems and software for improved performance and efficiency. 1. To understand the internal structure of a computer system; includes learning about the CPU (Central Processing Unit), memory, input/output devices, and the interconnections between them. 2. To understand how instructions are executed within a computer system. This involves learning about the instruction cycle, fetch-decode-execute cycle, and the role of the CPU in executing instructions. 3. To understand the memory organization and hierarchy of memory. This includes learning about primary memory (RAM), secondary memory (hard drives, SSDs), and cache memory. 4. To understand System Design and Architecture; including knowing word size, address bus size, data bus size, and the total memory capacity.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Knowing about the history of computers. 2. The input/output devices and their examples. 3. CPU and its components (ALU, CU, Register sets). 4. How CPU works and communicates with other HW parts. 5. Internal memory and its types. 6. How data are organized and accessed in main memory via read/write operations. 7. How to calculate main memory size (word size, data bus, and address bus). 8. External memory storage and its types. 9. How data are stored in external storage devices (magnetic, SSD, and optical). 10. How to calculate Hard disk capacity. 11. Memory hierocracy.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. - As an example of the system software part of the computer organization module, the DOS and Windows operating systems are taught in the LAB. - An example of the application software part of the computer organization module, the Word Processor is taught in LAB.

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. 1. PowerPoint presentation: with pictures, tables, and diagrams to explain the lesson interactively and clearly. 2. Using Visual Aids: such as diagrams and flowcharts to explain complex concepts. Visual representations can make abstract concepts more understandable and help students to understand the relationships between different components of a computer system. 3. Group Projects and Discussion: by assigning group projects or case studies that involve designing, analyzing, or implementing computer systems. Encourage students to work collaboratively, discuss their ideas, and share their findings. This fosters critical thinking, teamwork, and a deeper understanding of computer organization principles. 4. Formative Assessments: Incorporate formative assessments throughout the module to gauge student comprehension and identify areas where additional support may be needed. This can include quizzes, short assignments, or in-class discussions. Provide timely feedback to students to help them track their progress and address any misconceptions. 5. Active Learning Strategies: Encourage active learning through activities such as group discussions, peer teaching, problem-solving sessions, or debates. This promotes student engagement, critical thinking, and a deeper understanding of computer organization concepts.

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	64	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	86	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	5.7
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)	3 and 7	3, 7
	Assignments	2	10% (10)	9 and 10	9 and 10
	Projects/ Lab	2	10% (10)	Continuous	3, 5, 7 (Lab)
	Report	3	10% (10)	Continuous	All

Summative assessment	**Midterm exam**	2hr	10% (10)	8	All
	Final Exam	4hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction – computer history.
Week 2	Hardware and Software parts on the computer system.
Week 3	Input and output devices and their types.
Week 4	CPU components (CPU, CU, Register sets).
Week 5	How CPU works (READ and WRITE operations).
Week 6	Internal memory and its types (RAM, ROM, BIOS).
Week 7	How to calculate the main memory capacity. Practical example of memory size calculations.
Week 8	Midterm Exam
Week 9	External storage devices and their types.
Week 10	How data are stored on Hard disk device.
Week 11	Hard disk capacity calculations.
Week 12	Practical examples on Hard Disk size calculations.
Week 13	SSD and Optical storage devices.
Week 14	Memory hierocracy.
Week 15	Lectures Revision.
Week 16	**Final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: Introduction to peripheral devices (keyboard organization)
Week 2	Lab 2: DOS Command (general and system command: cls, date, time, ver, help, color, …)
Week 3	Lab 3: Directory Command in DOS. (Dir, md , rd, cd, tree, …)
Week 4	Lab 4: Create a tree of directories and delete it.
Week 5	Lab 5: File Command in DOS. (Echo, copy con, type, Ren, del)

Week 6	Lab 6: File Command in DOS. (copy, xcopy, move, attrib, dir/a)
Week 7	Lab 7: Create a Tree consists of directories and files and deletes the Tree. Introduction to the Windows operating system
Week 8	Midterm Exam
Week 9	How to create folders and files and give them attributes in Windows
Week 10	Windows taskbar + Control panel
Week 11	Windows OS revision
Week 12	Introduction to Word Processor
Week 13	Word Processor tabs and their main components
Week 14	Design a Word page contains all concepts that are explained earlier
Week 15	Word Processor Revision

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	- Computer Organization, First Edition – 2015, by Prof. K.Vikram - Fundamentals of Computer Organization and Architecture, by Mostafa Abd-El-Barr and Hesham El-Rewini, Wiley 2005	E-copy
Recommended Texts	- Computer Fundamentals and Applications, by Ashok Arora, Vikas Publishing House 2015 - COMPUTER ORGANIZATION AND DESIGN FUNDAMENTALS, First Edition- 2007, by David Tarnoff.	E-copy
Websites	http://www.ee.ryerson.ca/~courses/coe608/	

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 is required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

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MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Digital Logic**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CSC1209**				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level		1	**Semester of Delivery**		2
Administering Department			**College**		
Module Leader	Bushra A. Sultan		**e-mail**	Bushra.sultan@sc.uobaghdad.edu.iq	
Module Leader's Acad. Title		Assistant Prof.	**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	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	The course will teach the students about different systems in digital computers including: binary, octal, hexadecimal number systems, gray code and ASCII code. The course will help the students to simplify and analyze basic combinational logic circuits and write the Boolean output expression for any combinational logic circuit. In addition the students will learn to design logic circuits to do specific functions like addition in binary as well as studying the fundamentals of sequential logic devices such as Flip-Flop.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Understand the different number systems (binary, Octal, Hexadecimal and Decimal) 2. Convert any number from specific number system to other. 3. Do mathematical operations in binary and 4. Use Hexadecimal numbers system. 5. Use Octal numbers system. 6. Use logic expression to represent logic circuit. 7. Simplify logic circuits using Rules of Boolean Algebra and Karnaugh map. 8. Compare between logic circuits before and after simplification 9. Learn to design logic circuit to do addition operation by designing Half -Adder and Full-Adder. 10. Design decoder and use it to implement any Boolean function 11. Design Multiplexer and use it to design any Boolean function\ 12. Design ROM and use it to design any Boolean function 13. Design logic circuit for memory storage using flip flops.
Indicative Contents المحتويات الإرشادية	

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted in delivering this module are: 1. Power point presentation (Data show). 2. Explanation on the white board using different color markers. 3. Discussions with the student during teaching. 4. Interaction with students through daily problems practice through lecture. 5. Solve different problems with more exercises. 6. Use tool kits in LABs to design logic circuits in addition to simulator software. 7. Prepare reports that develop critical thinking for students. 8. Submit assignment that develop student learning.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	79	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	71	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4.7
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**150**		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (5)	5 and 9	LO #1, #2 and #9
	Assignments	2	15% (15)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	15% (10)	Continuous	All
Summative assessment	**Midterm Exam**	2hr	10% (10)	8	LO #1 - #8
	Final Exam	4hr	50% (50)	16	All
Total assessments			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	• Introduction to Digital computers , • Number systems (Binary, Decimal, Octal, and Hexadecimal)
Week 2	• Conversions from decimal to other bases and vice versa • The relation between the Octal, Hexadecimal and Binary numbers
Week 3	• Arithmetic Operation • Complements
Week 4	• The subtraction using complements (1's and 2's complements)
Week 5	• Binary logic and gates • Boolean functions (logical expression, T.T and logic circuit)

Week 6	• Simplification of Boolean functions using Boolean algebra • Canonical forms (Sum of Minterms)
Week 7	• Canonical forms (product of maxterms), Standard forms (Sum of Products and product of sums) • Conversions between canonical and standard forms and vice versa • Map simplification
Week 8	**Midterm Exam**
Week 9	• Product of sum simplification and don't care conditions • Other Logical Operations (NAND and NOR gates)
Week 10	• The Design procedure of Combinational Circuits • Adder
Week 11	• Subtractor • Code Convertor
Week 12	• Comparator • Decoder
Week 13	• Multiplexer • Midterm Exam
Week 14	• Read Only Memory (ROM)
Week 15	• Sequential Circuits
Week 16	**Final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab1: introduction to logic circuit designer (Logisim)
Week 2	Lab2: introduction to the basic gates and binary logic
Week 3	Lab3: Connect the basic gates (AND,OR ,NOT)
Week 4	Lab4: Connect simple Boolean functions
Week 5	Lab5: Obtain the T.T of any Boolean function, connect then verify the T.T
Week 6	Lab6: Implement Boolean functions in Standard and canonical form and connect it
Week 7	Lab7: Other Logical gates (NAND , NOR , XOR , and XNOR Simplify Boolean function using Map method and connect using NAND, NOR gates
Week 8	**Midterm Exam**

Week 9	Lab9: Implement the adder and connect it using gates
Week 10	Lab10: Implement the subtractor and connect it using gates
Week 11	Lab11: implement comparator and connect it using gates
Week 12	Lab12: Implement the any code conversion system and connect it using gates
Week 13	Lab13: Exam
Week 14	Lab14: Implement the Decoder and connect it using gates
Week 15	Lab15: Implement any combinational logic circuit using decoder

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Logic and Computer Design Fundamentals " 2'nd and 3ed editions", By "M. MORRIS MANO and CHARLES R. KIME, Prentice-Hall, Inc, 2001, 2002.	Yes
Recommended Texts	" Digital fundamentals "; Thomas L. Floyd; Pearson Prentice Hall,2009	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
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	F – Fail	راسب	(0-44)	Considerable amount of work required

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MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Discrete Structures**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CSC1208**				
ECTS Credits	**6**				
SWL (hr/sem)	150				
Module Level	1		**Semester of Delivery**	2	
Administering Department	Computer Science		**College**	Science	
Module Leader	Uhood Saadi Abdulkareem		**e-mail**	Uuhood.s@sc.uobaghdad.edu.iq	
Module Leader's Acad. Title	Ass.prof		**Module Leader's Qualification**	MSc.	
Module Tutor	Ghusoon Ghazi Mohammed		**e-mail**	Ghusoon.g@sc.uobaghdad.edu.iq	
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date	01/06/2023		**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	1. Discrete Structures are the abstract mathematical structures used to represent discrete objects and relationships between these objects. These discrete structures include logic, sets, permutations, relations, graphs, trees, and finite-state machines. 2. Discrete mathematics is about the mathematics of integers and of collections of objects. 3. It underlies the operation of digital computers, and is used widely in all fields of computer science for reasoning about data structures, algorithms and complexity. 4. Topics covered in the module include logic, proof techniques and sets, functions, relations, summations and recurrences, counting techniques and recursion.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. The main goal of this course is to build the mathematical and logic foundation from the perspective of a computer science scientist. The course focuses on gaining skills that will enable you to define, design, and solve computer science problems in a formal and rigorous way. 2. Explai**n** with examples the basic terminology of functions, relations, and sets. 3. Perform the operations associated with sets, functions, and relations. 4. Relate practical examples to the appropriate set, function, or relation model, and interpret the associated operations and terminology in context. 5. **Convert l**ogical statements from informal language to propositional and predicate logic expressions. 6. Apply formal methods of symbolic propositional and predicate logic, such as calculating validity of formulae and computing normal forms. 7. Use the rules of inference to construct proofs in propositional and predicate logic. 8. Describe how symbolic logic can be used to model real-life situations or applications, including those arising in computing contexts such as software analysis (e.g., program correctness), database queries, and algorithms. 9. Apply formal logic proofs and/or informal, but rigorous, logical reasoning to real problems, such as predicting the behavior of software or solving problems such as puzzles 10. Describe the strengths and limitations of propositional and predicate logic. 11. Illustrate by example the basic terminology of graph theory, as well as some of the properties and special cases of each type of graph/tree 12. Demonstrate different traversal methods for trees and graphs, including pre-, post-, and in order traversal of trees. 13. Model a variety of real-world problems in computer science using appropriate forms of graphs and trees, such as representing a network topology or the organization of a hierarchical file system. 14. Show how concepts from graphs and trees appear in data structures,

	algorithms, proof techniques (structural induction), and counting.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Part A – Data collection and Sampling **Mathematical Logic** Simple Logic Statements , Variable Use In Proposition Statements, Compound Logic Statements , Logical Propositions &Truth tables,Normal forms (conjunctive and disjunctive), Logical Equivalence , Tautology Statement & Contradiction tatement,Logical Implication & Validity of well-formed formula,Algebra Of Propositions, Conditional tatements & Variations [6 hrs] **Sets Theory** Principle Concepts of Sets ,Venn Diagrams, Sets of Numbers , Algebra of Sets , Family of Sets & index Family of Sets , Ordered Pairs & Product Sets, Boolean Algebra [5 hrs] **Relations** Binary Relation , Graph of the Relation ,Photographer epresentation of the relations,The Domain & the Range of a Relation , Identity Relation & Inverse Relation, Composition Relation, Type of Relation , Equivalence Relations [7 hrs] **Functions** Principle Concepts & Definition , Models of Functions , Composition Function , Algebra of Function [6 hrs] **Vectors and Matrices** Vectors, Matrices , Models of Square Matrices, Algebra in the Matrices, Determinants , Minors & Cofactors, Find Inverse Square Not Singular Matrix , Solving System of liner equations using the Nonhomogeneous Matrix, inverse and examples, Grammar Rule and examples [15 hrs] **Graph Theory** Principle Concepts, Type of Graphs,,Examples of Graphs , Graphs & Relation , Trees , Undirected graphs , Directed graphs , Weighted graphs (in algorithms), Spanning trees/forests [6 hrs]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted in delivering statistics term is to improve students skills and extending via participation in the exercises. Subsequently, this leads to achieved through classes and some sampling activities that are interesting to the students.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	48	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	3

Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	102	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6.8
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 9	
	Assignments	2	20% (20)	2 and 12	
	Projects / Lab.	0	0% (0)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
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 and basic concepts of Discrete Structures and definitions.
Week 2	**Chapter 1:- (Mathematical Logic)** 1- Introduction 2- Simple Logic Statements 3- Variable Use In Proposition Statements 4- Compound Logic Statements 5- Logical Propositions &Truth tables 6-Normal forms (conjunctive and disjunctive)
Week 3	7- Logical Equivalence 8- Tautology Statement & Contradiction Statement 9-Logical Implication & Validity of well-formed formula 10-Algebra Of Propositions 11- Conditional Statements & Variations
Week 4	**Chapter 2:- (Sets Theory)** 1- Introduction 2- Methods of Expressing Sets 3- Principle Concepts of Sets 4- Venn Diagrams

	5- Sets of Numbers 6- Algebra of Sets 7- Family of Sets & index Family of Sets 8- Ordered Pairs & Product Sets 9- Boolean Algebra
Week 5	**Chapter 3:- (Relations)** 1- Introduction 2- Binary Relation 3- Graph of the Relation 4- Photographer representation of the relations 5-The Domain & the Range of a Relation 6- Identity Relation & Inverse Relation
Week 6	7- Composition Relation 8- Type of Relation 9- Equivalence Relations
Week 7	**Chapter 4:- (Functions)** 1- Introduction 2- Principle Concepts & Definition 3- Models of Functions 4-Composition Function 5- Algebra of Function
Week 8	**Midterm Exam**
Week 9	**Chapter 5:- (Vectors and Matrices)** 1- Introduction 2- Vectors 3- Matrices 4- Models of Square Matrices 5- Algebra in the Matrices 6- Determinants
Week 10	**Midterm Exam**
Week 11	7- Minors & Cofactors 8- Find Inverse Square Not Singular Matrix
Week 12	9- Solving System of liner equations using the Nonhomogeneous Matrix inverse and examples
Week 13	10- Grammar Rule and examples
Week 14	**Chapter 6 :- (Graph Theory)** 1- Introduction 2- Principle Concepts 3- Type of Graphs
Week 15	4- Definitions 5- Examples of Graphs 6- Graphs & Relation 5. Trees • Properties • Traversal strategies 6. Undirected graphs 7. Directed graphs 8. Weighted graphs (in algorithms) Spanning trees/forests
Week 16	**Final Exam**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	1.Discrete Mathematics an open introductions ,Oscar levin	Yes
Recommended Texts	2.Discrete Mathematics and its applications, 7th Edition Kenneth H.Rosen 3.Discrete Mathematics with Applications 4th Edition, Susanna S. Epp. 4.Discrete Mathematical Structures,3rd Edition, Kolman	Yes
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 Descriptor Form
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Introduction to Computer Science**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CSC1103**				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level	1		**Semester of Delivery**	1	
Administering Department			**College**	Science	
Module Leader	Nasreen Jawad Kadhim		**e-mail**	nasreen.kadhim @sc.uobaghdad.edu.iq	
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**	Ph.D.	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Review Committee Approval			**Version Number**		

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	An introduction to computer science will be achieved through overviewing the computer system and identifying its components together with introducing the needed interaction between these components for performing solution for given tasks regardless of the programming languages used. The student will recognize the different generations to programming languages. This course aims to prepare a program designer. The fundamental stages of the program development life cycle have to be studied. Focus in this course will be on ways to design the solution of a given problem either by writing an algorithm or by drawing a flowchart. Also, program control flow has to be recognized. Moreover, the stages for compiling and processing a given program have to be identified. Furthermore, the common methodologies for programming will be studied.
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	At the end of this course, the students should be able to: - Use scientific reasoning and logical thinking for describing problem, identifying inputs, processes and desired outputs preparing for the design process. - Describe the purposes of program development life cycle (PDLC). - Design solution to problems through flowcharts and algorithms. - Process given or online materials and solutions, understand and analyze them. - Use sequence, selection and repetition structures for problem solving process.
Indicative Contents المحتويات الإرشادية	Indicative contents include the following: - Overview on the computer system, Computer system components, Hardware components, Software components, Interaction between computer components for executing Computer programs. - Different generations to programming languages. - The fundamental stages of the program development life cycle. Analyze problem, design solution, Code the design, Debug, Test, Document, Maintain, Redesign and extend the program. - Ways to design the solution of a given problem, Writing the solution steps through an algorithm, By drawing through a flowchart. - Program control flow. Sequential program flow, Selective PF, Repetitive PF, - Stages for compiling and processing a given program. - Methodologies of programming languages. - C++ Programming language, Program structure, Processing C++ program,

	Control structures for Sequential, Branched, and Looping.

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

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	117	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	7.8
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, LO #2, LO #3, and LO #4
	Assignments	2	10% (10)	3 and 14	LO #1, LO #3, and LO #5
	Projects	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	All
Summative assessment	**Midterm Exam**	2hr	10% (10)	8	LO #1, LO #3, and LO #4
	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 System
Week 2	Computer System Components

Week 3	Generations of Programming Languages
Week 4	Program Development Life Cycle: Part I
Week 5	Program Development Life Cycle: Part II
Week 6	Program Design: Flowcharts
Week 7	Program Design: Algorithms Program Control Flow
Week 8	Midterm Exam
Week 9	Programming with Problem Analysis-Coding-Execution Cycle
Week 10	Programming Methodologies
Week 11	Structure of C++ Program
Week 12	Steps For Processing C++ Program
Week 13	Constructs in C++ for Selection: Part I
Week 14	Constructs in C++ for Selection: Part II
Week 15	Constructs in C++ for Repetition
Week 16	**Final exam**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	C++ Programming: From Problem Analysis to Program Design, Fifth Edition D.S. Malik	Available online
Recommended Texts	C++ Programming: From Problem Analysis to Program Design (MindTap Course List) 8th Edition D.S. Malik	No
Websites	Free	

APPENDIX:

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	مقبول بقرار	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note:

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

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**English Language / First Year**			**Module Delivery**	
Module Type	**Basic**			☒ **Theory**	
Module Code				☐ **Lecture**	
ECTS Credits	**2**			☐ **Tutorial**	
SWL (hr/sem)	**50**			☐ **Practical**	
				☐ **Seminar**	
Module Level	1		**Semester of Delivery**	1	
Administering Department	Type Dept. Code		**College**	Type College Code	
Module Leader	Dr. Muthana Hameed Khalaf		**e-mail**	muthana.khalaf@sc.uobaghdad.edu.iq	
Module Leader's Acad. Title	Assistant 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	01/06/2023		**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	New Headway Beginner Plus is a Beginner course in English intended to provide students with the fundamentals of the language and a foundation at First Year students / college of science, moving towards a higher level of proficiency at this stage. 1. Listening Objectives: • Understand and respond to basic greetings, introductions, and simple instructions. • Comprehend and extract information from short, simple spoken passages related to everyday topics. • Identify and understand common vocabulary and expressions in spoken English. 2. Speaking Objectives: • Engage in basic conversations using simple greetings, introductions, and expressions related to personal information. • Ask and answer simple questions about personal details, daily routines, and familiar topics. • Participate in short dialogues and role-plays to practice communication skills. 3. Reading Objectives: • Read and comprehend simple texts, such as signs, labels, short passages, and dialogues. • Recognize and understand basic vocabulary words and phrases in context. • Extract information from texts related to everyday situations and topics. 4. Writing Objectives: • Write short sentences and paragraphs about personal information, experiences, and familiar topics. • Fill out basic forms with personal details, such as name, age, and nationality. • Write simple messages, notes, and emails related to everyday situations. 5. Vocabulary and Grammar Objectives: • Acquire a basic vocabulary related to common topics, such as greetings, numbers, time, family, food, and everyday objects. • Understand and use basic grammatical structures, including present simple, present continuous, simple past, and basic question forms. • Recognize and use common prepositions, articles, and basic sentence structures. 6. Cultural Awareness Objectives: • Develop an understanding of cultural customs and practices related to greetings, social norms, and everyday interactions in English-speaking countries. • Gain exposure to cultural elements through reading or listening to texts about customs, traditions, and holidays.

Module Learning Outcomes مخرجات التعلم للمادة الدراسية	By the end of the course, the students will be able to: 1. Listening and Speaking Skills: • Understand and respond appropriately to basic questions and statements. • Engage in simple conversations related to personal information, daily routines, and immediate surroundings. • Follow simple instructions and directions. • Develop basic pronunciation and intonation skills. 2. Reading Skills: • Recognize and understand basic vocabulary words and phrases in simple texts. • Comprehend and extract information from short, simple texts such as signs, notices, and labels. • Understand basic sentence structures and common grammatical patterns. 3. Writing Skills: • Write simple sentences and short paragraphs about personal information, experiences, and familiar topics. • Fill out simple forms and write basic personal information. • Write simple messages, notes, and emails related to everyday situations. 4. Vocabulary and Grammar: • Acquire and use a basic range of vocabulary related to everyday topics, such as greetings, numbers, time, family, food, and common objects. • Understand and use basic grammatical structures, including present simple, present continuous, simple past, and basic question forms. • Recognize and use common prepositions, articles, and basic sentence structures. 5. Cultural Awareness: • Develop an understanding of cultural customs and practices related to greetings, social norms, and everyday interactions in English-speaking countries. • Gain exposure to cultural elements through reading or listening to texts about customs, traditions, and holidays.
Indicative Contents المحتويات الإرشادية	1. Use simple forms of polite expressions to establish basic social contact and to perform everyday functions including making requests and offers, conducting simple phone conversations, asking and telling time, giving simple directions, asking about price, ordering a meal, etc. 2. Use a narrow range of positive and negative adjectives to describe objects, people and places. 2.3. Exchange information by forming and responding to simple questions. 3. Produce simple sentences using the correct word order and punctuation marks. 4. Use capital and lower case letters accurately in writing. 5. Construct a short guided paragraph on a familiar topic concerning home, family, friends and holidays.

	5. Use the basic tenses including the present and past simple, and present continuous correctly. 6. Use the basic auxiliary verbs (am/is/are/was/were/can) and a range of regular and irregular verbs. 7. Demonstrate awareness of the essential grammatical features and functions including questions and negatives, plural nouns, frequency adverbs, possessives, pronouns and determiners.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	1.Communicative Approach: Emphasize communicative activities that promote interaction among students. Encourage pair and group work, role-plays, and discussions to practice language skills in meaningful contexts. 2.Integrated Skills: Integrate the four language skills (speaking, listening, reading, and writing) in lessons to create a balanced approach to language learning. Provide opportunities for students to use and develop these skills simultaneously. 3.Vocabulary Expansion: Incorporate vocabulary-building exercises and activities throughout the course. Use real-life contexts, visuals, and practical examples to help students learn and remember new words. 4.Grammar Focus: Teach and reinforce grammar structures in a systematic and progressive manner. Provide clear explanations, examples, and practice exercises to ensure students understand and can apply the grammar rules correctly. 5.Authentic Materials: Include authentic texts, such as articles, newspaper clippings, songs, and videos, to expose students to real-world language usage. This helps develop their reading and listening comprehension skills and exposes them to cultural aspects of English-speaking countries. 6.Cultural Awareness: Integrate cultural topics and discussions into the lessons to foster cultural awareness and sensitivity. Encourage students to share their own cultural backgrounds and experiences to promote understanding and appreciation of diverse perspectives. 7.Error Correction: Provide constructive feedback and error correction during speaking and writing activities. Help students identify and correct their mistakes, focusing on accuracy while encouraging fluency and self-expression. 8.Technology Integration: Utilize technology tools, such as interactive whiteboards, online resources, and language learning apps, to engage students and enhance their language learning experience. Incorporate multimedia materials for listening and speaking practice. 9.Regular Assessment: Assess students' progress regularly through quizzes, tests, and assignments. Provide timely feedback to guide their learning and address areas that need improvement.

	10.Individualization: Cater to the individual needs and learning styles of students. Offer differentiated tasks and activities to ensure all learners are appropriately challenged and supported. 11.Cooperative Learning: Promote collaboration and teamwork among students through pair work, group projects, and peer feedback. This encourages active participation and a supportive learning environment. 12.Review and Revision: Schedule regular review sessions to consolidate previously learned material. Encourage students to revise and practice independently, providing resources for self-study and additional practice.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	17	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	1.25
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**50**		

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	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #9 and #10
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	# Hello! p6 ***am/are/is, my/your*** *I'm Pablo.* *My name's Judy.* *What's your name?* p6 ***This is ...*** *This is Ben.* *Nice to meet you.* p7
Week 2	# Your world p12***he/she/they, his/her*** *He's from the United States.* *Her name's Karima.* p13 *They're on holiday.* p16 Questions *What's his name?* *Where's she from?* p13
Week 3	# All about you p18 ***am/are/is*** *We're all singers.* p20 Negatives *She isn't a nurse.* p18 *I'm not from Scotland.* p20 *They aren't builders.* p20 Questions *What's her address? How old is she?* *Is she married?* p19 Short answers *Yes, she is. / No, she isn't.* p20
Week 4	# Family and friends p24 **Possessive adjectives** *my, your, our, their* p24 **Possessive *'s*** *Annie's husband Jim's office* p24 ***has/have*** *I have a small hotel. She has a job.* *We have three sons.* p27 **Adjective + noun** *a small hotel a big house a good job* p27*apples, beer, bread, cake* p36 **Shopping** *newsagent's, chemist's,* *off-licence* p36 **Can you come for dinner?** *Would you like some* *more rice?* *Could you pass the* *salt, please?* *How would you like* *your coffee?* *This is delicious!* p37

Week 5	# The way I live p32 **Present Simple *I/you/we/they*** *I like ice-cream. I don't like tennis.* *Do you like football?* p33 *Where do you work? Do you live in Dundee?* p34 *In Brazil they speak Portuguese.* p36 ***a* and *an*** *a waiter, an actor, an Italian restaurant* p34 **Adjective + noun** *an American car Spanish oranges* p37
Week 6	# Every day p40 **Present Simple *he/she*** *He gets up at 6.00.* *He has lunch in his office.* p42 *She lives in a small house.* p44 Questions and negatives *What time does he have breakfast?* *He doesn't live in London.* p43 **Adverbs of frequency** *He always works late.* *He never goes out.* p42
Week 7	# My favourites p48 **Question words** *who, where, why, how* p48 **Pronouns** Subject/Object/Possessive *I/me/my we/us/our they/them/ their* p49 ***this* and *that*** *I like this wine. Who's that?* p50
Week 8	**Mid Exam**
Week 9	# Where I live p56 ***There is/are ...*** *There's an old sofa.* *Are there any armchairs?* *There are some books.* p57 **Prepositions** *in, on, under, next to* p58
Week 10	# Times past p64 ***was/were born*** *When were you born?* *I was born in 1996.* p65 **Past Simple – irregular verbs** *went, came, saw* *She went shopping.* p68

Week 11	# We had a great time! p72 **Past Simple – regular and irregular** *played, got, watched, did* p72 Questions *What did you do?* *Did you go out?* p73 Negatives *They didn't go to work.* p73 ***ago*** *I went to Rome ten years ago.* p78
Week 12	# I can do that! p80 ***can/can't*** *He can speak French. I can't draw.* *Can she run fast?* p80 **Adverbs** *I can cook a little bit. I can't cook at all.* *really well, fluently* p82 **Requests and offers** *Can you tell me the time? Can I help you?* p83
Week 13	# Please and thank you p88 ***I'd like ...*** *I'd like some ham.* *How much would you like?* p88 ***some* and *any*** *I'd like some cheese.* *Do you have any Emmental?* *I don't have any apple juice.* p89 ***like* and *would like*** *I like Coke.* *I like going to the cinema.* *I'd like to go out.* p91
Week 14	# Here and now p96 **Present Continuous** *She's wearing a T-shirt.* *What's he doing?* p97 **Present Simple and Present Continuous** *He lives in London.* *They're staying in a hotel.* p98
Week 15	# It's time to go! p104 **Future plans** *They're going on holiday.* *Which countries are you going to visit?* *I'm leaving on Tuesday.* *What are you doing this evening?* p104

	Revision Question words – *when, where, who, how* p106 Tenses – present, past, and future tenses p110
Week 16	**Preparatory week before the final Exam**

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Soars, John and Liz, (2011), New Headway Plus, Special Edition, Beginner Level, Oxford University Press.	Yes
Recommended Texts	New Headway Plus provides an integrated skills course with each unit divided into grammar, vocabulary, skills work and everyday English segments	yes
Websites	Oxford University Press: The New Headway series is published by Oxford University Press. Visit their website at www.oup.com and search for "New Headway Plus, Special Edition, Beginner Level " or browse their English language teaching section for information on the course.	

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.

	Ministry of Higher Education and Scientific Research - Iraq University of Baghdad College of Engineering Department of Electrical Engineering	

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**HUMAN RIGHTS & DEMOCRACY**			**Module Delivery**	
Module Type	**BASIC**			**X Theory** **Lecture** **Tutorial** **Seminar**	
Module Code					
ECTS Credits	2				
SWL (hr/sem)	50				
Module Level	1		**Semester of Delivery**	1	
Administering Department	Type Dept. Code		**College**	Type College Code	
Module Leader	**Ansam Faik Abdul - Rezzak Al-Obidi**		**e-mail**	**ansam.faik@sc.uobaghdad.edu.iq**	
Module Leader's Acad. Title	**Lecturer**		**Module Leader's Qualification**	M.Sc.	
Module Tutor	None		**e-mail**	None	
Peer Reviewer Name			**e-mail**		
Review Committee Approval	8/06/2023		**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	**1. This course deals with the basic concept of human rights& democracy** **2. Clarifying and training students on the most important principles of human rights and democracy.** **3. Organizing discussions and presentations on the most vital and basic topics affecting community building, related to human rights and democracy..** **4. Adopting teamwork with students to develop their cognitive abilities and create a spirit of cooperation, initiative, creativity and exchange of views in an effort to build the foundations of peaceful community coexistence.** **5. Providing society with conscious youth aware of the importance of its role in building society, its unity and cohesion through spreading the culture of human rights and establishing the rules of correct democracy.** **6. Human rights guarantee the protection and respect of an individual's interests, even when he or she is not a majority. In a democratic climate, sustainable democratic power cannot be conceived without respecting, protecting and fulfilling human rights. Through their combined influence, they allow the individual a life based on the freedom of self-determination and collective. That is why the protection and realization of human rights truly form the basis of the democratic project.**
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	**Cognitive goals.** **1. Educate students and inform them about the importance of human rights and democracy.** **2. Recognize and understand the methods of teamwork for the exchange of ideas and creative discussions** **3. Developing students' performance through guidance in preparing mini-research on modern vocabulary on vital topics related to human rights and democracy.** **4. Providing students with creative development abilities in modern proposals and creative developmental ideas by discussing awareness videos presented on electronic classes.** **5. Developing the skills of sharing opinions and ideas and respecting others opinion.** **6. Objective Skills :** **7. Basic knowledge in the principles of human rights and democracy.**

	8. Building the innovative personality of knowledge through online research and the transfer and exchange of information. **9. Discuss the various properties about everything related to human rights and their importance in our daily lives.** **10. Identify everything related to democracy and the foundations of the performance of the electoral process and its importance in building the nation.** **11. Identify the capacitor and inductor phasor relationship with respect to voltage and current.**
Indicative Contents **المحتويات الإرشادية**	**- Developing the student's analytical and critical skills regarding the reality and future of human rights and democracy** **- Training the student on the importance of active participation in aspects of public life, such as promoting respect for the principles of public human rights and active participation in political and cultural life.** **- Enable students to understand the importance of education and its role in spreading the culture of human rights and democracy in building a civilized society based on good governance, the most important component of which is belief in human rights, education and active participation in governance through free and fair elections.**
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 discussions, dialogues and group work lectures & exercises, while at the same time refining and expanding their critical thinking skills. There are many teaching and learning methods used, and the most important of these methods are: Theoretical lecture, discussion and dialogue, panel discussions on certain topics, theoretical student research** **Library and electronic activities (which helps students to reach the following results:** **1- The scientific ability to distinguish between correct information and wrong information.** **2- Ease of scientific drafting and ease of correction.** **3. Ability to memorize and guess.** **4- The ability to link concepts and principles with reality.** **5. Ability to invoke, link, interpret.**

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	17	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	1.25
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	50		

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, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Attending lectures	1	1%	1.5	41#15 weeks
	Report	1	10% (10)	13	LO # 5, 9 and 10
Summative assessment	**Midterm Exam**	2 hr	10% (10)	8	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري مادة حقوق الانسان و الديمقراطية

	Material Covered **Human rights & Democracy**
Week 1	**Familiarity with the concept of human rights and the definitions approaching it, discussing, dismantling and criticizing them in a scientific way in order to reach the most accurate and objective. - Definition of right , of human, of the concept of human rights. Human rights qualities, Types of human rights Human Rights Categories**
Week 2	**The historical development of human rights: Orcagina Reforms 1- Urnamo Law.2- The law of Ishtar Bit. 3- The law of the Kingdom of Eshnuna.4- Code of Hammurabi.**
Week 3	**Human rights in other ancient civilizations: 1- Indian and Chinese civilization 2- Pharaonic civilization of Egypt 3- Greek civilization 4- Roman civilization**
Week 4	**Human rights in heavenly laws** **Human Rights in Judaism, Human rights in Christianity, Human Rights in Islam.**
Week 5	**Human rights in Renaissance - modern and contemporary societies** **Introducing the student to the most important UN document in the field of human rights, which was approved and approved by the Assembly on January 10, 1948**

	Universal Declaration of Human Rights 1948.
Week 6	**Non-governmental organizations defending human rights: Amnesty International, b. International Committee of the Red Cross. Arab Organization for Human Rights.**
Week 7	**Definition of the phenomenon of administrative corruption, Types of administrative corruption, Causes of administrative corruption. The repercussions of the phenomenon of administrative corruption on human rights and society. Successful treatments to combat corruption and protect society from it.**
Week 8	**Introduction - Historical development of the concept of democracy, definition of democracy, freedom. The difference between freedom and democracy, The relationship between the rights and public freedoms of individuals and democracy, Islamic views in a democratic system of government , Shura and Democratic System**
Week 9	**Specifications and duties of the Islamic ruler reading, The era of Imam Ali "peace be upon him" to his governor over Egypt: Specifications of the Islamic ruler: First: The moral and doctrinal components of the ruler Second: The general culture of the Islamic ruler, Third: Acumen and good choice: -Fourth: Direct relationship with people: Fourth: Direct relationship with people.** **Duties of the Islamic ruler:** **First: Social Reform: Second: Achieving security and defense** **Third: The architecture of the country "economic development"**
Week 10	**Forms of democracy: (1): Direct democracy ,(2): Semi-direct democracy , (3): Parliamentary democracy (parliamentary representation)4): Liberal Democracy** **(5): consociation Democracy, (6): Delegated Democracy.**
Week 11	**Conditions for the success of the elements and pillars of the democratic system General conditions for the success of the democratic system: 1. Respect for human rights, 2. Political pluralism 3. Peaceful transfer of power 4. Political equality 5. Respect the principle of the majority 6. Existence of the rule of law.**
Week 12	**Components or elements of democracy:** **1 – Citizenship 2- Political participation 3. Elections 4. MPs and Responsibility 5. Opposition 6- Separation of government and parliament 7- Constitutional legitimacy**
Week 13	**The concept of elections and their legal adaptation: First: The concept of election Second: Legal adaptation of the Election, Third: Conditions of Election, Fourth: Concepts of Elections, Fifth: Types of Electoral Systems. Assessing the Democratic System, Pros and advantages of the democratic system, Disadvantages and disadvantages of the democratic system, Implementing the democratic system in Iraq.**
Week 14	**Lobbyists: First: the concept and definition. Second: Types of pressure groups. Third: The methods of pressure groups that they use to achieve their goals.** **Fourth: Lobbying and Democracy.**
Week 15	**Preparatory Week**
Week 16	**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	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Martyrdom verses from the Holy Quran Mohammed Al-Tarawneh et al., International Humanitarian Law, ICRC, Amman, 2005 Diamond Larry, Democracy: Its Development and Ways to Enhance It, translated by Fawzia Naji, Dar Al-Mamoun for Translation, Iraq, 2005.	Yes
Recommended Texts	journal.un.org Hadi, Riad Azabz. (2005). Human rights (evolving contents and protection) (Baghdad).	Yes
Websites	Universal Declaration of Human Rights | United Nations https://sc.uobaghdad.edu.iq/?page_id=8415 https://www.youtube.com/@ansamalobidimanagerofhuman2891	

APPENDIX:

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	مقبول بقرار	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note:				

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

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Probability and Statistics**			**Module Delivery**	
Module Type	**Basic**			☒**Theory** ☐**Lecture** ☐**Lab** ☐**Tutorial** ☐**Practical** ☐**Seminar**	
Module Code	**CSC12010**				
ECTS Credits	**4**				
SWL (hr/sem)	**100**				
Module Level	1		**Semester of Delivery**	2	
Administering Department	Computer Science		**College**	Science	
Module Leader	Zeina Mueen Mohammed		**e-mail**	zeina.m@uobaghdad.edu.iq	
Module Leader's Acad. Title	Assistant prof.		**Module Leader's Qualification**	Ph.D.	
Module Tutor			**e-mail**	E-mail	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	01/06/2023		**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	1. Statistical knowledge helps the student to reach the proper methods how to collecting data. 2. This course deals with the basic concepts of statistics and probability. 3. This is the basic subject for collecting data, sample size and analysis. Subsequently, understand how to classify these samples according to the data base. 4. Statistics is a crucial process behind how we make discoveries in science, make decisions based on data, and make predictions.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Recognize how will use appropriate statistical terms to describe data 2. Apply key concepts of probability, including discrete and continuous random variables, sampling. 3. Students will compute fluently and make reasonable estimations. 4. Summarize what is meant by a basic electric circuit. 5. Students will apply basic concepts of probability. 6. Students will apply concepts of various probability distributions to find probabilities. 7. Define Ohm's law. 8. Students will make estimations for a mean, variance, standard deviation and proportions. 9. Students will make estimations for a probability and relations with mathematical operations.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. <u>Part A – statistical Part</u> - Introduction and basic concepts of statistics and definitions. - Types of data sets, types of sampling and collecting data. - Construction of frequency distributions (grouped data and ungrouped data)[15 hrs] - Relative frequency distributions and cumulative frequency distributions (less than & more than).[10 hrs] - Frequency Distribution Charts : Histogram, Polygon, curve and Pie charts.[6 hrs] <u>Part B – Probability Part</u> - Measures of Central Tendency (grouped data and ungrouped data) : (Arithmetic Mean, Harmonic mean, Geometric Mean , Mode) [15 hrs] - Measures of Variation (grouped data and ungrouped data) [7 hrs] - Counting Techniques: Terminology in probability theory and some relations Venn diagram laws of set relation , Combinations and Permutation. [15 hrs] - Relations from set theory (addition, multiplication, division and subtraction) The discrete and continues distributions including (Normal dist., Gamma dist., Binomial dist., and Poisson dist.) [15 hrs]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted in delivering statistics term is to improve students skills and extending via participation in the exercises. Subsequently, this leads to achieved through classes and some sampling activities that are interesting to the students.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	67	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4.47
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**	2	10% (10)	5 and 9	
	Assignments	2	10% (10)	2 and 12	
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
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 and basic concepts of statistics and definitions.
Week 2	Types of data sets, types of sampling and collecting data.
Week 3	Construction of frequency distributions (grouped data and ungrouped data)

	Relative frequency distributions and cumulative frequency distributions (less than & more than)
Week 4	Frequency Distribution Charts : Histogram, Polygon, curve and Pie charts.
Week 5	Measures of Central Tendency (grouped data and ungrouped data) : (Arithmetic Mean, Harmonic mean, Geometric Mean , Mode)
Week 6	Median and Comparison between (Mean, Mean and Mode) and the relationship.
Week 7	Measures of Variation (grouped data and ungrouped data)
Week 8	**Midterm Exam**
Week 9	Measures of Variation (grouped data and ungrouped data)
Week 10	(grouped data and ungrouped data) Range, Mean or average Deviation
Week 11	(grouped data and ungrouped data) : Standard Deviation, Variance and Coefficient Variation
Week 12	Counting Techniques: Terminology in probability theory and some
Week 13	Venn diagram laws of set relation ,
Week 14	relations from set theory (addition, multiplication, division and subtraction)
Week 15	Rules and Combinations and Permutation
Week 16	**Final Exam**

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Miller, I., Miller, M., & Freund, J. E. (2014). *John E. Freund's mathematical statistics with applications*. Boston: Pearson,	Yes
Recommended Texts	**مبادئ الاحصاء – امير حنا هرمز**	No
Websites	https://www.um.edu.mt/__data/assets/pdf_file/0004/289201/Statistics.pdf	

Grading Scheme
مخطط الدرجات

Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
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	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 DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Programming Fundamentals I**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CSC1101**				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level		1	**Semester of Delivery**		1
Administering Department			**College**		
Module Leader	Bara'a Ali Attea		**e-mail**	bara.a@sc.uobaghdad.edu.iq	
Module Leader's Acad. Title		Professor	**Module Leader's Qualification**		Ph.D.
Module Tutor	Aminah Dahim Abbood		**e-mail**	amenah.abbood@sc.uobaghdad.edu.iq	
Peer Reviewer Name		Name	**e-mail**	E-mail	
Scientific Committee Approval Date		01/06/2023	**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	1. To examine a C++ program. 2. To explore how a C++ program is processed. 3. To review the steps required to execute programs written in C++. 4. To learn what an algorithm is and explore problem-solving techniques. 5. To become aware of structured design programming. 6. To become familiar with the basic components of a C++ program, including data types, input/output, control structures, and user-defined functions.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Learn the basics of C++ as a collection of one or more standard functions, syntax rules, semantic rules, symbols, special words, and comments. 2. Learn what a stream is and examine input and output streams. 3. Learn unary and binary mathematical operators. 4. Learn precedence and associativity rules. 5. Learn pre and post increment and decrement. 6. Learn relational and logical operators. 7. Learn how to form and evaluate logical (Boolean) expressions. 8. Learn how to use the selection control structures: if, if... else, nested if, and nested if…else. 9. Learn how to construct and use counter-controlled, sentinel-controlled, flag-controlled, and endless looping structures. 10. Learn to program any loop with loop control variable (LVC). 11. Learn how to get correct control on LCV. 12. Learn how to use “while” and “for” keywords. 13. Learn how to form and use single, multiple disjoint, and nested loop structures. 14. Learn the possibility to convert from multiple loops to single loop. 15. Learn the possibility to convert from nested loop to single loop.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Part A – Primary problem solving technique: Sequential path In this part, the student will learn how to define a program as a sequence of statements whose objective is to accomplish some task. The examined programs are simple and straightforward. To process a program, the computer begins at the first executable statement and executes the statements in order until it comes to the end. [10 hrs] Part B – Moderate problem solving technique: Selective path In this part, the student will learn how to tell a computer that it does not have to follow a simple sequential order of statements; it can also make decisions, where the program executes particular statements depending on some condition(s). Here, in this part, the student must understand the nature of conditional statements, and how to use them. Also, in this part the student must be able to express conditions by simple and compound logical (Boolean) expressions, make comparisons using relational operator, and how to evaluate to them to logical (Boolean) values. [15 hrs] Part C – Major problem solving technique: Looping In this part, the student will learn how a computer repeats certain statements over

	and over until certain conditions are met. The student must learn at least two types of looping structures. These are “while” and “for” looping structure. However, the student must learn the structure of “while” before the structure of “for”. The student must learn where is the decision maker, the body of the loop, and the statement that eventually sets the expression to false. The student must also learn a counter controlled while loop that uses a counter to control the loop and a sentinel-controlled while loop that uses a sentinel to control the while loop. [50 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 and daily quizzes, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering types of simple experiments involving some sampling activities that are interesting to the students.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	79	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	71	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4.7
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**150**		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	5 and 11	LO #1, #2 and #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)	12	LO #5, #8 and #9
Summative assessment	**Midterm Exam**	2hr	10% (10)	8	LO #1 - #7
	Final Exam	4hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Three main rules for problem solving techniques.
Week 2	Structured programming.
Week 3	Output statements.
Week 4	Input statements.
Week 5	Assignment operator, declaration and assignment statements.
Week 6	Mathematical operators and expressions.
Week 7	Pre- and post- increment and decrement. If function, if statements, and body of if statement.
Week 8	Midterm Exam
Week 9	If…else function and if…else statements.
Week 10	Loop Control Variable (LCV), LCV initialization, LCV conditional expression, and LCV update.
Week 11	While function, while statements, and body of while statement.
Week 12	Nested while loops.
Week 13	For function, for statements, and body of for statement.
Week 14	Nested for loops.
Week 15	**Preparatory week before the final Exam**
Week 16	**Final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: Be familiar with the Editor and run window of C++.
Week 2	Lab 2: Output operator and output statements.
Week 3	Lab 3: Input operator and input statements.
Week 4	Lab 4: Assignment operator, assignment operands and assignment statement
Week 5	Lab 5: Playing with mathematical operators and expressions.
Week 6	Lab 6: if statement and nested if statements.

Week 7	Lab 7: if…else statement and nested if…else statements, while statement..
Week 8	Midterm Exam
Week 9	Lab 9: endless loop.
Week 10	Lab. 10: nested while statement.
Week 11	Lab 11: for statement.
Week 12	Lab 12: endless for loop.
Week 13	Lab. 13: nested for statement.
Week 14	Lab 14: playing with multiple loops.
Week 15	Lab. 15: converting nested loops to single loop.

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	C++ PROGRAMMING: FROM PROBLEM ANALYSIS TO PROGRAM DESIGN, 5th EDITION, D.S. MALIK, 2011.	No
Recommended Texts		
Websites	https://docs.google.com/viewer?a=v&pid=sites&srcid=ZGVmYXVsdGRvbWFpbnxjcDJuZGlqfGd4OjQxN2NjMWU0ZGZlYzI4NDU	

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 DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Programming Fundamentals II**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CSC1217**				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level		1	**Semester of Delivery**		2
Administering Department			**College**	Science	
Module Leader	Bara'a Ali Attea		**e-mail**	bara.a@sc.uobaghdad.edu.iq	
Module Leader's Acad. Title		Professor	**Module Leader's Qualification**		Ph.D.
Module Tutor	Amenah Dahim Abbood		**e-mail**	amenah.abbood@sc.uobaghdad.edu.iq	
Peer Reviewer Name		Name	**e-mail**	E-mail	
Scientific Committee Approval Date		01/06/2023	**Version Number**		1.0

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	Programming Fundamentals I	**Semester**	1
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1. To explore how to declare and manipulate data into 1D and 2D arrays in a C++ program. 2. To become familiar with the restrictions on array processing. 3. To explore how to construct and use a value-returning, user-defined function in a program. 4. To learn how to construct and use void functions in a program. 5. To discover the difference between value and reference parameters. 6. To explore reference parameters and value-returning functions. 7. To learn about the scope of an identifier. 8. To examine the differences between local and global identifiers.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Explore how to declare and manipulate data into arrays in a C++ program. 2. Become familiar with the restrictions on array processing. 3. Become familiar with 1D arrays. 4. Become familiar with 2D arrays. 5. Search, manipulate, and sort an array. 6. Search for the K^{th} smallest/largest element in a sorted/unsorted array. 7. Examine value-returning functions, including actual and formal parameters. 8. Explore how to construct and use a value-returning, user-defined function in a program. 9. Learn how to construct and use void functions in a program. 10. Discover the difference between value and reference parameters. 11. Explore reference parameters and value-returning functions. 12. Learn about the scope of an identifier. 13. Examine the differences between local and global identifiers.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Part A – Arrays In this part, the student will learn how to define structured data types. Recall that in the previous module (module CSC1101) a data type is called simple if variables of that type can store only one value at a time. In this part, in contrast, in a structured data type, each data item is a collection of other data items. Simple data types are building blocks of structured data types. The first structured data type that we will discuss is an array. One-dimensional and two-dimensional arrays are examined in this part. [25 hrs] Part B – User-defined functions In this part, the student will learn how to tell a computer that it does not have to follow a simple structure of one function (main), it can also make user-defined functions. The student learned in the previous module (module CSC1101) that a C++ program is a collection of functions. One such function is main. The programs in the previous module (module CSC1101) use only the function main; the programming instructions are packed into one function. This technique, however, is good only for short programs. For large programs, it is not practical (although it is possible) to put the entire programming instructions into one function, as you will discover in this part. The student must learn to break the problem into manageable pieces. This part first discusses the user-defined functions. [50 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 and daily quizzes, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering types of simple experiments involving some sampling activities that are interesting to the students.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	79	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	71	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4.7
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**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
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	10	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	2hr	10% (10)	8	LO #1 - #7
	Final Exam	4hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	1D arrays.
Week 2	Reading, printing, searching an array.

Week 3	Manipulating array indices and elements.
Week 4	Sorting arrays.
Week 5	Finding the K^{th} smallest/largest element in the array without sorting it.
Week 6	Playing with 2D arrays.
Week 7	Square matrices, main diagonal, and secondary diagonal. Playing with the triangle components of a square matrix.
Week 8	**Midterm Exam**
Week 9	User-defined functions: declaration, header, body, formal parameters, and actual parameters.
Week 10	Passing parameters by value to a user-defined function.
Week 11	Passing parameters by address to a user-defined function.
Week 12	Void user-defined functions.
Week 13	User-defined function with return.
Week 14	Passing arrays and matrices to a user-defined function.
Week 15	**Preparatory week before the final Exam**
Week 16	**Final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: Reading and printing 1D array.
Week 2	Lab 2: Processing elements in 1D array (Search, replace, etc.).
Week 3	Lab 3: Sorting 1D array.
Week 4	Lab 4: Searching for an ordered element in unsorted array.
Week 5	Lab 5: Playing with 2D arrays.
Week 6	Lab 6: Playing with 2D square matrices.
Week 7	Lab 7: Playing with triangles of 2D square matrices. Void user-defined functions with no parameters
Week 8	**Midterm Exam**
Week 9	Lab 9: Void user-defined functions with passing parameters (by value).
Week 10	Lab. 10: Void user-defined functions with passing parameters (by address).
Week 11	Lab 11: User-defined functions with passing parameters (by value) and return.
Week 12	Lab 12: User-defined functions with passing parameters (by address) and return.

Week 13	Lab. 13: User-defined functions with passing 1D arrays.
Week 14	Lab 14: User-defined functions with passing 2D arrays.
Week 15	Lab. 15: Calling user-defined functions inside loops.

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	C++ PROGRAMMING: FROM PROBLEM ANALYSIS TO PROGRAM DESIGN, 5th EDITION, D.S. MALIK, 2011.	No
Recommended Texts		
Websites	https://docs.google.com/viewer?a=v&pid=sites&srcid=ZGVmYXVsdGRvbWFpbnxjcDJuZGlqfGd4OjQxN2NjMWU0ZGZlYzI4NDU	

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 Description Form
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Scientific Writing Skills**			**Module Delivery**	
Module Type	**Basic**			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CSC1105**				
ECTS Credits	**4**				
SWL (hr/sem)	**100**				
Module Level	1		**Semester of Delivery**	1	
Administering Department			**College**		
Module Leader	Aminah Dahim Abbood		**e-mail**	amenah.abbood@sc.uobaghdad.edu.iq	
Module Leader's Acad. Title	Asst. Prof.		**Module Leader's Qualification**	Ph.D.	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date	01/06/2023		**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 is designed to develop students' abilities to write effectively in the scientific community. Students will learn to write clear, concise, and well-organized scientific report, research proposals, and literature reviews. The course will focus on the elements of good scientific writing, including structure, style, citation, and ethical issues.
Module Learning Outcomes	Upon completion of this course, students should be able to: 1. Understand the principles of scientific writing

مخرجات التعلم للمادة الدراسية	2. Develop clear and concise scientific writing skills 3. Use effective scientific citation techniques 4. Understand and apply the ethical principles of scientific writing 5. Develop the ability to critically evaluate scientific literature 6. Develop the ability to give and receive constructive feedback
Indicative Contents المحتويات الإرشادية	Understanding task requirements and marking criteria Addressing issues of text organization and coherence Clarity and conciseness, Choose appropriate verb tenses, Addressing issues of criticality, Anatomy of a scientific argument Organization: coherence and cohesion, Organize report sections appropriately, Write in a clear and concise manner Use information from different reading sources to support your argument, to develop your own 'voice' in academic writing, and to avoid plagiarism. Take a critical approach to reading/writing and use strategies for critical writing Understand academic conventions for referencing Use academic style appropriately (Stylistic development) Devise your own strategies for improving final drafts or subsequent written assignments Develop familiarity with common features of scientific arguments through the analysis of examples. Consider the reasons underpinning these features of scientific writing Provide opportunities for controlled practice in producing these features of scientific argumentative writing Correct expression of ideas for precise meaning. Appropriate formality of grammar and vocabulary Effective relationships between parts of the text. Clear linking

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	• brainstorming techniques • Review grammar and spelling basics. Grammar and spelling form the foundation of good writing. ... • Read what you want to write. Knowing what a finished piece of writing can look like can guide your own. ... • Proofread. ... • Get feedback. ... • Think about structure. ... • Write. ... • Know some common fixes.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	64	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	36	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	2.4
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	10% (10)	Continuous	All
	Assignments	3	10% (10)	Continuous	All
	Vocabulary and grammar Quizzes	2	10% (10)	Continuous	All
	Report and essay	4	10% (10)	Continuous	All
Summative assessment	**Midterm Exam**	2hr	10% (10)	8	All
	Final Exam	4hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
Week	**Material Covered**
Week 1	Introduction to Scientific Writing ● Overview of the course ● Principles of scientific writing ● Overview of scientific research

Week 2	Understanding task requirements and marking criteria Addressing issues of text organization and coherence
Week 3	Clarity and conciseness
Week 4	Choose appropriate verb tenses
Week 5	Addressing issues of criticality Anatomy of a scientific argument
Week 6	Organization: coherence and cohesion
Week 7	Organize report sections appropriately Write in a clear and concise manner
Week 8	**Midterm Exam**
Week 9	Use information from different reading sources to support your argument, to develop your own 'voice' in academic writing, and to avoid plagiarism. Take a critical approach to reading/writing and use strategies for critical writing
Week 10	Understand academic conventions for referencing Use academic style appropriately (Stylistic development)
Week 11	Devise your own strategies for improving final drafts or subsequent written assignments
Week 12	Develop familiarity with common features of scientific arguments through the analysis of examples. Consider the reasons underpinning these features of scientific writing
Week 13	Provide opportunities for controlled practice in producing these features of scientific argumentative writing
Week 14	Correct expression of ideas for precise meaning. Appropriate formality of grammar and vocabulary
Week 15	Effective relationships between parts of the text. Clear linking
Week 16	**Final Exam**

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Bailey, S., 2017. Academic writing: A handbook for international students. Routledge.	yes
Recommended Texts		
Websites	https://www.nottingham.ac.uk/cele/alcs/courses.aspx#scientific	

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 Descriptor Form
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**System Software**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CSC12111**				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level	1		**Semester of Delivery**	2	
Administering Department			**College**		
Module Leader	Nasreen Jawad Kadhim		**e-mail**	nasreen.kadhim @sc.uobaghdad.edu.iq	
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**	Ph.D.	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Review Committee Approval			**Version Number**		

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	Programming Fundamentals I Computer Organization	**Semester**	1
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 aims to provide the student with an understanding of system software and its interaction with computer hardware in the journey of processing programs. Also, it aims at providing the student with an understanding of the basics of operating system, translators, linkers, loaders, debuggers, editors in addition to device drivers. Furthermore, to provide him with the necessary knowledge about system maintenance and administration.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	At the end of this course, the students should be able to: ✔ To have an understanding of system software. ✔ To understand the relationship between system software and machine architecture. ✔ To have an understanding of basic concepts that lie behind operating systems. ✔ To understand the processing of a program written in a language other than machine language for execution on a computer. ✔ To have an understanding of language translators. ✔ To have an understanding of linker and loader. ✔ To understand and know the working of device drivers. ✔ To get an understanding of system maintenance and administration
Indicative Contents المحتويات الإرشادية	Indicative contents include the following: - System Software: An overview. - Operating System Basics: Need, functions, types, and services. - Process, memory, and storage management. - Assemblers: Elements of Assembly Language Programming, a Simple Assembly Language Scheme. - Macro Processors: Macro Definition and Call. - Loader and Linkers: Relocation and Linking Concept. - Introduction to Compilers: Aspects of Compilation, Interpreters. - Editors and Debuggers: Various types of Editors and Debuggers. - Device Drivers: Introduction to the Device Driver, Requirements of Device Driver, Types of Device Driver. - System Maintenance and Administration: Backup and recovery,

	software updates, and monitoring system 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, 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	48	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	3
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	102	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6.8
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**	3	10% (10)	5, 10 and 14	LO #3, and LO #5
	Assignments	2	10% (10)	6 and 15	LO #3, LO #5, LO #6, and LO #7
	Project	1	10% (10)	Continuous	All
	Report	1	10% (10)	15	All
Summative assessment	**Midterm Exam**	2hr	10% (10)	8	LO #1, LO #2, LO #3, LO #4, and LO #5
	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 System Software
Week 2	Operating System Need and Functions
Week 3	Operating Systems Types
Week 4	Operating System Services
Week 5	Process Management
Week 6	CPU Scheduling in Operating Systems
Week 7	Memory Management in Operating System, Storage Management
Week 8	**Midterm Exam**
Week 9	Assemblers
Week 10	Macro Processors
Week 11	Compilers and Interpreters
Week 12	Loader and Linkers: Relocation and Linking Concept
Week 13	Editors and Debuggers
Week 14	Device Drivers: An Introduction
Week 15	System Maintenance and Administration
Week 16	**Final exam**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	1. Leland L. Beck "System Software – An Introduction to Systems Programming", 3rd Edition, Pearson Education Asia, 2000. 2. Santanu Chattopadhyay, "System Software", Prentice-Hall India, 2007.	yes

Recommended Texts	"System Software" by Ikvinderpal Singh	
Websites		

APPENDIX:

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	مقبول بقرار	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note:

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