MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Logic Design 2**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**Soft-123**				
ECTS Credits	**7**				
SWL (hr/sem)	**125**				
Module Level	1		**Semester of Delivery**	2	
Administering Department	Type Dept. Code		**College**	Type College Code	
Module Leader	Name: ali abd_almunim		**e-mail**	E-mail	
Module Leader's Acad. Title	Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Name : ali abd_almunim		**e-mail**	E-mail	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	10/2/2025		**Version Number**		

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	Soft-113	**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	**التعرف على الية عمل البوابات المنطقية وكيفية بناء الدائرة المنطقية بعد تبسيط التعبيرالمنطقي وفق قوانين وضعت لهذا الغرض**
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	**1- التعرف على الصيغة الرقمية للاعداد العشرية الثمانية والسداسية** **2- طرق التحويل بين الاعداد والانظمة** **3- التعرف على كيفية اجراء عمليات الضرب والجمع والقسمة بين الاعداد والانظمة المختلفة** **4- دراسة مفصلة عن البوابات المنطقية وربطها من الناحية المنطقية** **دراسة مفصلة عن الماسكات في الدوائر الالكترونية والفلب فلوب**
Indicative Contents المحتويات الإرشادية	The indicative contents of logic design may include the following: 1.Introduction to digital circuits and logic gates: This includes an overview of digital circuits, logic gates, Boolean algebra, and truth tables. 2.Combinational logic design: This includes designing combinational circuits using basic logic gates, Karnaugh maps, and Boolean algebra. 3.Sequential logic design: This includes designing sequential circuits using flip-flops, registers, counters, and other sequential logic components. 4.Analysis and optimization of digital circuits: This includes analyzing digital circuits using truth tables, timing diagrams, and other tools, as well as optimizing circuits for speed, power consumption, or other performance metrics. 5.Computer-aided design (CAD) tools: This includes using popular CAD tools such as Verilog, VHDL, and SPICE to simulate and validate digital circuits.

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

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem)	64	**Structured SWL (h/w)**	7

الحمل الدراسي المنتظم للطالب خلال الفصل		الحمل الدراسي المنتظم للطالب أسبوعيا	
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	61	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**125**		

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

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Binary, octal and hexadecimal numbers
Week 2	Binary Operation: Addition and Subtraction Operation
Week 3	Binary Code Decimal
Week 4	Logic Gate
Week 5	Boolean Algebra
Week 6	Logic Simplification
Week 7	Mid-term Exam
Week 8	Karnaugh Map (K-M)
Week 9	Latches and Flip-flops
Week 10	SR Latch
Week 11	SR Flip-flop
Week 12	D Flip-flop

Week 13	JK Flip-flop
Week 14	T Flip-Flop
Week 15	Master- Slave JK Flip-flop
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Logic gates
Week 2	Half adder
Week 3	Full adder
Week 4	Boolean algebra
Week 5	Simplify of logic gates
Week 6	SR Flip flop
Week 7	Mid-term Exam
Week 8	D latch
Week 9	D Flip flop
Week 10	JK flip flop connection
Week 11	T Flip flop
Week 12	Master Slave JK Flip flop
Week 13	SR Latch
Week 14	Review
Week 15	Recap
Week 16	**Preparatory week before the final Exam**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Digital Design by M. Morris Mano Fifth edition	Yes

Recommended Texts	[1] Computer System Architecture Third Edition M. Morris Mano [2] Digital Fundamentals Eight Edition FLOYD [3] Digital Fundamentals Ninth Edition FLOYD	No
Websites		

Grading Scheme
مخطط الدرجات

Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

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

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Computer organization 2**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☐ **Tutorial** ☒ **Practical** ☒ **Seminar**	
Module Code	**Soft-121**				
ECTS Credits	**6**				
SWL (hr/sem)	**155**				
Module Level	1		**Semester of Delivery**	2	
Administering Department	Type Dept. Code		**College**	Type College Code	
Module Leader	Name: ahmed hafiz		**e-mail**	E-mail	
Module Leader's Acad. Title	Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Name: ahmed hafiz		**e-mail**	E-mail	
Peer Reviewer Name	Name:		**e-mail**	E-mail	
Scientific Committee Approval Date	10/2/2025		**Version Number**		

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	Soft-111	**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	Computer organization refers to the way in which the hardware components of a computer system are arranged and interconnected. It implements the provided computer architecture and covers the "How to do?" aspect of computer design. The aim of computer organization is to provide a clear understanding of the operation of a computer system.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Discussing the organization of computer-based systems and how a range of design choices are influenced by applications. 2. Understanding different processor architectures and system-level design processes. 3. Understanding the structure, function and characteristics of computer systems. 4. Understanding the design of the various functional units and components of computers. 5. Identifying the elements of modern instructions sets and their impact on processor design. 6. Explaining the function of each element of a memory hierarchy. 7. Identifying and comparing different methods for computer I/O. 8. Grasping the basic elements of logic circuits and other higher level modules. 9. Demonstrating computer organization & its programming consideration.
Indicative Contents المحتويات الإرشادية	A- Aims: The main goal of this course is to teach students the foundation of computer organization, the structure and behavior of the various functional units of the computer and how they interact to provide the processing needs of the user. The course aims to provide students with sufficient background necessary to understand the hardware operation of digital computers. Objectives include enabling students to: 1. Learn about computer functional modules. 2. . Understand the algorithms used in computerarithmetic. 3. Understand the techniques used in designing a digital computer. 4. Understand the concepts related to computer architecture. 5. Understand the basics of parallel processing B- Intended Learning Outcomes (ILOs): A- Knowledge and Understanding: Students should ... A1) Learn the concepts of computer organization. A2) Know the important principles and definitions of computer architecture. B- Intellectual skills: with the ability to ... B1) Compare and analyse the techniques used in the different computer functional modules. B2) Apply the appropriate tools to a digital computer design. C- Subject specific skills – with ability to ... C1) Work on the implementation of the algorithms of the computer arithmetic. C2) Translate the learned concepts and ideas into practice. C3) Understand the main attributes of a computer system architecture. D- Transferable skills – with ability to D1) Possess good knowledge of the concepts of computer architecture. D2) Develop advanced techniques, tools and algorithms into complete projects. D3) Choose the appropriate computer functional module for a certain project.

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

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	94	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	7
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	61	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**155**		

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

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	basic Structure of Computers (Qualitative Discussion)
Week 2	Register Transfer and Micro-operation
Week 3	basic Computer Organization and Design
Week 4	CPU Organization
Week 5	Control Unit Hardwired Control Unit, Micro-programmed Control Unit: Control memory, Address Sequencing, conditional branching, mapping of instructions, subroutine, Design of Control Unit.
Week 6	CPU Registers Program Counter, Stack Pointer Register, Memory Address Register, Instruction Register,
Week 7	Mid-term Exam
Week 8	Instructions. Operational Code, Operands, Zero, One, Two and Three Address Instruction, Instruction Types, Addressing modes, Data Transfer and Manipulation instructions, Program control instructions.
Week 9	CISC and RISC processors Introduction, relative merits and De-merits
Week 10	Computer Peripherals VDU, Keyboard, Mouse, Printer, Scanner (Qualitative approach).
Week 11	Memory Primary memory: ROM, PROM, EPROM, EEPROM, Flash memory
Week 12	Memory RAM: SRAM, DRAM, Asynchronous DRAMs, Synchronous DRAMs, Structure of Larger Memories, RAMBUS Memory, Cache Memory.
Week 13	Memory Mapping Functions, Replacement Algorithms, interleaving, Hit and Rate penalty, Virtual memories, Address Translation, Memory.
Week 14	Memory Management requirements, Secondary Storage: Magnetic Hard Disks, Optical Disks, and Magnetic Tape Systems.
Week 15	Computer Peripherals VDU, Keyboard, Mouse, Printer, Scanner (Qualitative approach).
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: Principle of Windows I
Week 2	Lab 2: Principle of WindowsII
Week 3	Lab 3: Principle of Windows IV
Week 4	Lab 4: Format pc I

Week 5	Lab 5: Format pc II
Week 6	Lab 6: Microsoft Office
Week 7	Lab 7: Power point
Week 8	Power point II
Week 9	Power point IV.
Week 10	Internet basic knowledge

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	- Computer System Architecture, Mano, Latest edition,	Yes
Recommended Texts	• Computer Organization, Hamacher, McGraw-Hill. • Structured computer organization, Tanenbaum, Prentice Hall	No
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks %**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

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

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**English Language1**			**Module Delivery**	
Module Type	**Supporting**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**WUO2**				
ECTS Credits	**2**				
SWL (hr/sem)	**86**				
Module Level	1		**Semester of Delivery**	2	
Administering Department	Type Dept. Code		**College**	Type College Code	
Module Leader	Name: haider akab		**e-mail**	E-mail	
Module Leader's Acad. Title	Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Name :		**e-mail**	E-mail	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	10/2/2025		**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 Objectives أهداف المادة الدراسية	Students will focus on English at a pre-intermediate level concentrating on the receptive skills of reading and listening and the productive skills of writing and speaking. These will include such things as comparatives and superlatives, quantifiers, possessive adjectives and pronouns, vocabulary building, role-play activities for speaking, reading comprehension and writing short descriptive paragraphs.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Teaching the four English skills(reading, writing, speaking ,listening and translation)
Indicative Contents المحتويات الإرشادية	Active contents in learning English refer to the factual points that candidates are expected to know and understand in order to pass an exam or course.

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

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	34	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	7
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	52	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**86**		

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

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction computer user
Week 2	Digital camera
Week 3	Computer architecture Processor CPU
Week 4	Computer architecture Binary system
Week 5	Computer architecture Hard disk
Week 6	Computer application Speed trap
Week 7	Mid-term Exam
Week 8	Computer application ATM, Data base , barcode
Week 9	Peripheral
Week 10	Peripheral
Week 11	Former student Higer national certificated
Week 12	Former student Higer national certificated
Week 13	Operating system
Week 14	Operating system
Week 15	Graphic user interface
Week 16	**Preparatory week before the final Exam**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Oxford English in INFORMATION TECHNOLOGH	Yes
Recommended Texts	Interchange by Jack C. Richards	No
Websites	A junior English Grammar and Composition	

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

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MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Discrete Structure			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☒ **Practical** ☒ **Seminar**	
Module Code	**Soft-114**				
ECTS Credits	**2**				
SWL (hr/sem)	**104**				
Module Level	1		**Semester of Delivery**	2	
Administering Department	Type Dept. Code		**College**	Type College Code	
Module Leader	Name: inas salman		**e-mail**	E-mail	
Module Leader's Acad. Title	Professor		**Module Leader's Qualification**	M.SC	
Module Tutor	Name (if available)		**e-mail**	E-mail	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	2025/2/10		**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 main goal of this course is to provide students with the knowledge related to digital design, computer architecture and assembly language. Objectives: • Understand Logic gates • Design Combinational and Sequential Circuits • Write and Analyze Assembly programs
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Its emphasis is on the lower level abstraction of a computer system. Topics included: digital logic, instruction set, ALU design, memory and assembly language programming. The course offers programming practice with an assembly language to provide practical application of concepts presented in class
Indicative Contents المحتويات الإرشادية	Identify the different types of circuits. Identify the different types of registers. Relate C programs into Assembly language. Identify the different parts of a virtual memory. Identify the different encoding of information. Identify different types of overflow attacks. Subject specific skills – with ability to ... Design combinational circuits Design sequential circuits. Develop an assembly program. Analyze and Debug a C and Assembly programs.

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

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	104	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	7
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	49	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**104**		

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

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction , procedural
Week 2	programming principles
Week 3	Algorithms and flowcharts, properties and design
Week 4	Algorithms and flowcharts, properties and design
Week 5	C++ Language Basics (Characte set, Identifiers, keywords Variables, Constants
Week 6	C++ operators (Arithmetic Operators, Assignment operators, relational operator, comparison and logical operators, bitwise logical operators), type
Week 7	Mid-term Exam + Unit-Step Forcing, Forced Response, the RLC Circuit
Week 8	Selection Statements (Selection Statements, The Single If Statement Structure, The Single If Statement Structure (Blocks), The If/else
Week 9	Statement Structure
Week 10	Nested If and If/else Statements, else if
Week 11	statement
Week 12	Switch
Week 13	switch, conditional statement
Week 14	loop
Week 15	Do/While Statement,
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Opening the computer
Week 2	Opening the language
Week 3	Opening the language
Week 4	Character set identifiers
Week 5	Getting started with C++
Week 6	Variable declarations
Week 7	In program explain Variables constants Program of arithmetic Operations the "math.h"

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	1-Fundamentals of Programming C++, Richard L. Halterman , School of Computing Southern Adventist University September 12, 2016	Yes
Recommended Texts	2- Programming Languages design and implementation, Terrenne W. Pratt ,2000.	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 DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Fundamentals of programming 2			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**Soft-122**				
ECTS Credits	**7**				
SWL (hr/sem)	**155**				
Module Level	1		**Semester of Delivery**	2	
Administering Department	Type Dept. Code		**College**	Type College Code	
Module Leader	Name: mohammed husain		**e-mail**	E-mail	
Module Leader's Acad. Title	Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Name (if available)		**e-mail**	E-mail	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	10/2/2025		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	Soft-112	**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 develop problem solving skills and understanding of circuit theory through the application of techniques. 2. Study the basic knowledge about fundamentals of programming languages.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Study the Classification of programming, the structure and operations of a computer, basic of arithmetic operations and control structure.
Indicative Contents المحتويات الإرشادية	most programming languages courses cover the basics of programming concepts such as data types, variables, control structures, functions, and algorithms. They also cover more advanced topics such as object-oriented programming, software engineering principles, and web development.

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

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	155	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	7
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	94	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**155**		

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

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Programming Languages types
Week 2	Programming Languages Translators
Week 3	Features of High level Programming language
Week 4	The Structure And Operation Of A Computer and The Hardware Of The Computer
Week 5	Representation of integer and real
Week 6	Representation of characters
Week 7	Mid-term Exam + Unit-Step Forcing, Forced Response, the RLC Circuit
Week 8	Character Data, Sizeof, Typedef, Sequence
Week 9	Introduction to Structured Programming
Week 10	Two Way Selection
Week 11	Basic Arithmetic operators
Week 12	Basic Logical operators
Week 13	Input/ Output interfaces
Week 14	Control structure (sequences ,conditional, and loops)
Week 15	Constant and variables representations
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Introduction to classes and objects.
Week 2	Defining and declaring a class with a method
Week 3	Declaring a method with a parameter in c#
Week 4	Introducing instance variables in c#
Week 5	Mid-term Exam
Week 6	Introducing instance variables, set methods, get methods
Week 7	Initializing Objects with constructors

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	1-Fundamentals of Programming C++, Richard L. Halterman , School of Computing Southern Adventist University September 12, 2016	Yes
Recommended Texts	2- Programming Languages design and implementation, Terrenne W. Pratt ,2000.	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 DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Mathematics 2**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**Soft-124**				
ECTS Credits	**5**				
SWL (hr/sem)	**125**				
Module Level	1		**Semester of Delivery**	2	
Administering Department	Type Dept. Code		**College**	Type College Code	
Module Leader	Name: zain al_abdeen abbas		**e-mail**	E-mail	
Module Leader's Acad. Title	Professor		**Module Leader's Qualification**	M.SC	
Module Tutor	Name (if available)		**e-mail**	E-mail	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	2025/2/10		**Version Number**		

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	Soft-114	**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	This course studies the mathematical elements of software department Topics include propositional logic; predicate logic; mathematical reasoning; techniques of proof; mathematical induction; set theory; number theory; matrices; sequences and summations; functions, relations and their properties, elementary graph theory, and tree.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Learning outcomes are concise descriptions of what students will learn and how that learning will be assessed
Indicative Contents المحتويات الإرشادية	In general, mathematics is the study of numbers, quantities, and shapes2. It is a subject that is used in everyday life and is essential in many careers such as engineering, science, and finance3

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

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	64	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	7
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	61	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**125**		

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

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Laplace transform for standard important function
Week 2	Multiplication by tn, division by t,unit step function
Week 3	Inverse Laplace transform of derivatives
Week 4	Application of laplace transformation
Week 5	Solution of non-linear equations, Newton Raphson method for approximating, Lagrange approximation.
Week 6	Numerical differentiation and numerical integration, The Solutions of Integral equations, Trapezoidal method
Week 7	Mid-term Exam
Week 8	Simpsons method
Week 9	Fourier series for odd and even functions ,Half range Fourier sin and cosine series
Week 10	Change of interval
Week 11	Formation of Partial differential equations
Week 12	Types of partial differential equations,wave equation,heat equation
Week 13	Numerical differentiation, Euler method, modified Euler method
Week 14	Rung Kutta method, Rung Kutta- merson method

Week 15	Numerical analysis,Elimination and iterative methods
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Thomas Calculus", 12thED,George B. Thomas Jr., Maurice D. Weir, Joel R. Hass, 2009Differential Equations (Schaum's Outlin Series).	Yes
Recommended Texts	Calculus (Haward Anton).	No
Websites	Advanced Engineering Mathematics (Erwin Kreyszig)	

Grading Scheme مخطط الدرجات				
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