MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**C++ Programming**			**Module Delivery**	
Module Type	**core**			☒**Theory** ☒**Lecture** ☒**Lab** ☒**Tutorial** ☐**Practical** ☐**Seminar**	
Module Code	**AITE-1104**				
ECTS Credits	**5**				
SWL (hr/sem)	**125**				
Module Level	1		**Semester of Delivery**	1	
Administering Department	AIET		**College**	Techniques Engineering	
Module Leader	Haider Hassan Ouda		**e-mail**	hayder_alghanimi@hilla-unc.edu.iq	
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**	PhD	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date			**Version Number**		

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	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. Learn the basic steps involved in entering, compiling, and executing and debugging a program. 2. Apply structured programming control concepts of sequence, selection and repetition in the C++ language. 3. Effectively use scalar data types float, int, and char. 4. Manipulate elementary arrays. 5. Design and effectively use functions and parameters. 6. Create Files.

Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Recognize computer system and programming languages. 2. Build simple program by using different data types. 3. Define the relational operators and logical expressions. 4. Adding new abilities to program by using selection control structures. 5. Applying repetition control structures in programs. 6. Perform, Break and continue Statements. 7. Recognize functions in C++ program and their types and how to use them in program 8. Define the Enumeration type with Functions 9. Identify String type with string Operations 10. Using arrays with their types in programs and strings with functions. 11. Applying pointer data types and classes. 12. Apply recursion in functions 13. Perform simple file I/O streams
Indicative Contents المحتويات الإرشادية	1. Introduction to computers and Classification of programming languages (1 hours), 2. Introduction to problem solving (3 hours), 3. Computers and Programming Languages (3 hours), 4. Processing a C++ Program (3 hours). 5. Basics of a C++ Program, Data Types, Variables, Arithmetic Operators (3 hours) , 6. Assignment and Input Statements (3 hours). 7. Input / Output, I/O Streams (3 hours), 8. Predefined Functions, Output Formatting (3 hours), 9. Control Structures I (Selection): Relational Operators, Logical Expressions (3 hours), If/If…else, Block Statements (3 hours), 10. Switch Structures (3 hours), 11. Control Structures I (Repetition) : While Looping, Do…while Looping (3 hours), For Looping (3 hours), 12. Break and continue Statements (3 hours), 13. Preparatory week before the final Exam 14. User-Defined Functions (6 hours), 15. User-defined simple data types and the string type (6 hours), 16. Arrays and strings (6 hours), Pointers, Classes (3 hours), 17. File Input/ Output (3 hours).

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, homework's and examples. Practical examples help students to understand the course material.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	64	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4.5
Unstructured SWL (h/sem) الحمل الدراسي الغير المنتظم للطالب خلال الفصل	58	**Unstructured SWL (h/w)** الحمل الدراسي الغير المنتظم للطالب أسبوعيا	3.9
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

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

Delivery Plan (Weekly Syllabus) المنهاج الدراسي النظري	
Week	**Material Covered**
Week 1	Introduction to Programming Language
Week 2	Algorithms and Flow Charts & Variables Declaration
Week 3	Problem Solving Using C++: identifiers, data types, variables, output
Week 4	More Basics: arithmetic expressions, input, formatted output, library, const

Week 5	Variables ,Constants, Arithmetic Operations The "math.h" Library Increment /decrement Operators.
Week 6	Increment /decrement Operators
Week 7	Operational Assignment Operators Relational Operators Logical Operators.
Week 8	Selection Statements: The Single If Statement Structure. Nested If and If/else Statements Conditional Statement.
Week 9	Switch Selection Statement (Selector)
Week 10	While Repetition Structure.
Week 11	Do/While Statement
Week 12	For Statement
Week 13	Break and continue statement
Week 14	More about For Statement. Nested Loops.
Week 15	Function
Week 16	**Preparatory week before the final Exam**

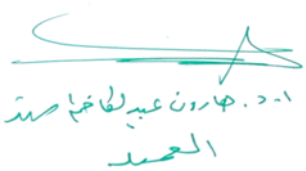
Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Explain Menu, Getting Started with C++.
Week 2	Variables Declaration
Week 3	Input, Output Statements
Week 4	Input, Output Statements
Week 5	Mathematical function
Week 6	Mathematical function
Week 7	Assignment Operators Relational Operators Logical Operators
Week 8	If Statements
Week 9	Switch Statements
Week 10	While Statements
Week 11	Do/While Statements
Week 12	For Statements
Week 13	Break and continue statement
Week 14	For Statements
Week 15	Function

Delivery Plan (Weekly Tutorial) المنهاج الاسبوعي الدراسي	
Week	**Material Covered**
Each week, a question sheet related to the material presented in the theoretical lecture will be solved and debated.	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	The Complete Reference Borland C++, By Herbert Schildt, Mc_GrawHill	Yes
Recommended Texts		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.



رئيس القسم

مدرس المادة

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Digital Circuits**			**Module Delivery**	
Module Type	**Core**			☒ **Theory Lecture** ☒ **Lab** ☒**Tutorial** ☒**Practical** **Seminar**	
Module Code	**AITE-1101**				
ECTS Credits	**5**				
SWL (hr/sem)	**125**				
Module Level	1		**Semester of Delivery**	1	
Administering Department	AIET		**College**	Techniques Engineering	
Module Leader	Hussein Fadhil Hamdan		**e-mail**	eng.hussain.fadhle@ uobabylon.edu.iq	
Module Leader's Acad. Title	Professor		**Module Leader's Qualification**	PhD	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date	24/12/2024		**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. To be able to deal with the number systems and codes. 2. To understand the functionality of logic gates. 3. To have a skill to use the logic gates in designing logic circuit. 4. To have a skill to simplify the digital circuits. 5. To learn the simplification process, Boolean expression, Demorgans law, and Karnaugh map. 6. To understand the principles for designing logic circuit. 7. To understand adder, subtractor, decoder, incoder, multiplexer, demultipleaer, and comparator circuits.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Recognize each type of number systems. 2. Identify the process of converting between number systems. 3. Summarize the types of logic gates. 4. Discuss the use of each gate. 5. Describe design of logic circuit by using logic gats. 6. Explain the simplification processes. 7. Explain Boolean expression and Demorgan's law. 8. Explain the Karnaugh map for different numbers of bits. 9. Discuss the design of logic circuit before and after simplification. 10. Explain the combinational logic circuit. 11. Identify the adder, subtractor, decoder, encoder, multiplexer, demultiplexer, comparator circuits, and code conversion. 12. Identify the basic circuit elements and their applications
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. --Number systems - decimal, binary, octal, and hexadecimal number system, conversion, operation. **[8 hrs]** -Codes- excess-3,gray code, conversions, operations, complements **[8 hrs]** --Logic gates-NOT, AND, OR, NOR, NAND, XOR, XNOR. **[5 hrs]** --Logic simplification-Boolean theorem and Demorgans law. **[10 hrs]** --Karnaugh map-SOP, POS, and don't care. **[10 hrs]** --Arithmetic operations Part A- adder, parallel binary adder, subtractor, adder-subtractor . **[10 hrs]** --Arithmetic operations Part B- multiplexer, demultiplexer, decoder, encoder, comparator, and code conversion. **[10 hrs]**

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 type of simple experiments involving some sampling activities that are interesting to the students.

Student Workload (SWL) الحمل الدراسي للطالب موزع على 15 اسبوع			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	67	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4.5
Unstructured SWL (h/sem) الحمل **الدراسي الغير** المنتظم للطالب خلال الفصل	58	**Unstructured SWL (h/w)** الحمل الدراسي الغير المنتظم للطالب أسبوعيا	3.9
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	**Quiz**	2	10% (10)	5, 10	LO #1- 3, LO # 4 - 8
	Assignments	1	10% (10)	12	LO # 1-11
	Projects / Lab.	1	10% (10)	Continuous	LO # 1-12
	Report	1	10% (10)	Continuous	LO # 1-12
Summative assessment	**Midterm Exam**	2 hr	10% (10)	10	LO # 1-10
	Final Exam	4hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Number systems (decimal, binary, octal, conversions, operations)
Week 2	Number systems (hexadecimal, BCD, conversions, operations)
Week 3	Number systems (excess-3,gray code, conversions, operations, complements)
Week 4	Logic gates (AND,OR,NOT,NAND,NOR,XOR,XNOR)
Week 5	Logic simplification (Boolean theorem)
Week 6	Logic simplification (Demorgan's theorem)
Week 7	Karnaugh maps(2-variables,3-variables,)
Week 8	Karnaugh maps (4-variables (SOP,POS,don't care))
Week 9	Karnaugh maps (5-variables, (SOP,POS,don't care))
Week 10	Midterm exam
Week 11	Arithmetic operations
Week 12	Arithmetic operations (decoder, encoder)
Week 13	Arithmetic operations (Multiplexer, Demultiplexer)
Week 14	Arithmetic operations (comparators)
Week 15	Arithmetic operations (code conversion)
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	logic gates (NOT, AND,OR)
Week 2	Logic gates (NOR.NAND)
Week 3	Logic gates (XOR,XNOR)
Week 4	Boolean theorem
Week 5	Demorgan's law
Week 6	Karnaugh map
Week 7	SOP
Week 8	POS, don't care

Week 9	Combinational circuit (half adder, full adder)
Week 10	Combinational circuit (Half subtractor, full subtractor)
Week 11	Decoder and Encoder circuits
Week 12	Multiplexer and Demultiplexer circuits
Week 13	Comparator circuit
Week 14	Code conversion circuits

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Digital Fundamentals by Floyed	Yes
Recommended Texts	Digital circuit analysis and design with Simulink modeling by Steven T. Karris	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.

أ.د. هارون عبد الفتاح صالح العبيدي

رئيس القسم

HF Hamdan

مدرس المادة

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Mathematics**			**Module Delivery**	
Module Type	**Support or related learning activity**			☒**Theory** ☒**Lecture** ☐**Lab** ☒**Tutorial** ☐**Practical** ☐**Seminar**	
Module Code	**AITE-1102**				
ECTS Credits	**5**				
SWL (hr/sem)	**125**				
Module Level	1		**Semester of Delivery**	1	
Administering Department	AIET		**College**	Techniques Engineering	
Module Leader	Ruqaya Alaa ibrahim		**e-mail**	ruqia_alaa_ibrahim@hilla-unc.edu.iq	
Module Leader's Acad. Title	Assistant Lecturer		**Module Leader's Qualification**	Msc	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date	24/12/2024		**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	1. To Understand concepts of vectors and vector operations.

أهداف المادة الدراسية	2. To understand concepts of linear algebra. 3. To get a grasp of various methods to solve systems of linear equations. 4. To compute linear transformations. 5. To be able to determine Eigenvalues and Eigenvectors. 6. To perform matrix diagonalization.
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	1. Recognize Vectors concepts, notation and Operations. 2. Discuss dot product, cross product, Orthogonal and orthonormal vectors. 3. Discuss the terms Diagonal, Triangular, Symmetric, Square Matrix, and Transpose of a Matrix. 4. Describe the matrix operations {addition, subtraction, scalar multiplication, multiplication}. 5. Identify Determinant and Inverse for Nonsingular matrices. 6. Discuss aspects about System of Linear Equations (Linear Equations, Linear Equations Solution, Matrix equations.). 7. Identify Row operations, row-echelon form "triangular", Rank of a Matrix, reduced row-echelon form, Augmented Matrix. 8. Discuss Gaussian elimination. 9. Explain Gauss–Jordan elimination and Solving Systems with Inverses. 10. Explain Cramer's Rule. 11. Explain Linear Combinations of Vector, span. 12. Explain Linear Dependence and Independence, Basis and Dimension, Rank of a Matrix. 13. Recognize Linear Transformations. 14. Discuss Polynomials of Matrices, Characteristic Polynomial, Cayley–Hamilton Theorem. 15. Discuss Eigenvalues and Eigenvectors, Diagonalizing Matrices.
Indicative Contents **المحتويات الإرشادية**	<u>Part A - Vectors.</u> This part includes Vectors definition, notation {Ordered set, Matrix, Unit vector}, Magnitude, Unit, Zero, negative, Direction, Operations on vectors {addition, subtraction, scalar multiplication}. In addition to Operations on vectors {dot product, cross product}, Orthogonal, orthonormal vectors. **[6 hrs]** + Revision problem classes in weekly tutorials **[2 hrs]** <u>Part B – Matrices.</u> This part will take in details Matrices (Matrix, Diagonal, Triangular, Symmetric, Square Matrix, Transpose of a Matrix.), in addition to operations {addition, subtraction, scalar multiplication, multiplication}. Furthermore, Determinant, Inverse (Nonsingular). **[10 hrs]** + Revision problem classes in weekly tutorials **[3 hrs]** <u>Part C – System of Linear Equations.</u> This part discusses System of Linear Equations (Linear Equations, Linear Equations Solution, Matrix equations.), in addition to Row operations, row-echelon form "triangular", Rank of a Matrix, reduced row-echelon form, Augmented Matrix. Furthermore, Gaussian elimination, Gauss–Jordan elimination, Solving Systems with

	Inverses, Cramer's Rule is described. **[14 hrs]** + Revision problem classes in weekly tutorials **[4 hrs]** Part D – Vector Spaces and Diagonalization. This part discusses Vector Spaces (Linear Combinations of Vector, span, Linear Dependence and Independence, Basis and Dimension, Rank of a Matrix, Linear Transformations. Furthermore, Diagonalization (Polynomials of Matrices, Characteristic Polynomial, Cayley–Hamilton Theorem, Eigenvalues and Eigenvectors, Diagonalizing Matrices.) [15 hrs] + Revision problem classes in weekly tutorials [5 hrs]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	This module will primarily focus on encouraging students to participate in the activities, as well as refining and developing their critical thinking skills. This will be achieved through lectures, tutorials, discussions, and grading activities.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل المنتظم للطالب خلال الفصل	67	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4.5
Unstructured SWL (h/sem) الحمل الغير المنتظم للطالب خلال الفصل	58	**Unstructured SWL (h/w)** الحمل الدراسي الغير المنتظم للطالب أسبوعيا	3.9
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	20%	5,10	LO #1 - 4, LO # 6-9
	Assignments	2	15%	5,10	LO # 1 - 14, LO # 6-9
	Projects / Lab.	N/A			
	Report	1	5%	Cont.	LO # 1-15
Summative assessment	Midterm Exam	2 hr	10% (10)	5	LO # 1-7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الدراسي النظري

	Material Covered
Week 1	**Vectors (**Definition, notation {Ordered set, Matrix, Unit vector}, Magnitude, Unit, Zero, negative, Direction, Operations on vectors {addition, subtraction, scalar multiplication}.**)**
Week 2	**Vectors (**Operations on vectors {dot product, cross product}, Orthogonal, orthonormal vectors.**)**
Week 3	**Matrices (**Matrix, Diagonal, Triangular, Symmetric, Square Matrix, Transpose of a Matrix.**)**
Week 4	**Matrices (**operations {addition, subtraction, scalar multiplication, multiplication}.**). Matrices (**Determinant, Inverse (Nonsingular)**)**
Week 5	**Midterm Exam**
Week 6	**System of Linear Equations (**Linear Equations, Linear Equations Solution, Matrix equations**.)**
Week 7	**System of Linear Equations (**Row operations, row-echelon form “triangular”, Rank of a Matrix, reduced row-echelon form, Augmented Matrix**.)**
Week 8	**System of Linear Equations (Gaussian elimination.), System of Linear Equations (**Gauss–Jordan elimination, Solving Systems with Inverses**.)**
Week 9	**System of Linear Equations (**Cramer's Rule**.)**
Week 10	**Midterm Exam**
Week 11	**Vector Spaces (**Linear Combinations of Vector, span.**). Vector Spaces (**Linear Transformations.**)**
Week 12	**Midterm Exam**
Week 13	**Vector Spaces (**Linear Dependence and Independence, Basis and Dimension, Rank of a Matrix.)
Week 14	**Diagonalization (**Polynomials of Matrices, Characteristic Polynomial, Cayley–Hamilton Theorem.)
Week 15	**Diagonalization (**Eigenvalues and Eigenvectors, Diagonalizing Matrices.**)**
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Tutorial) المنهاج الاسبوعي	
	Material Covered

Each week, a question sheet related to the material presented in the theoretical lecture will be solved and debated.

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	David C. Lay, Judi J. McDonald, Steven R. Lay, "Linear Algebra and Its Applications", Pearson Education, 6th edition (July 10th 2020), ISBN-13: 978- 0136880929.	Yes
Recommended Texts	Gilbert Strang, " Linear Algebra and Its Applications", Cengage Learning, 4th edition, (January 1, 2006), ISBN-13: 978-0030105678.	No
Websites	https://www.udemy.com/course/linear-algebra-with-applications/	

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
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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.

رئيس القسم

مدرس المادة

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Democracy and Human Rights**			**Module Delivery**	
Module Type	**Basic learning activities**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**MTU1006**				
ECTS Credits	**2**				
SWL (hr/sem)	**50**				
Module Level	1		**Semester of Delivery**	1	
Administering Department	AIET		**College**	Techniques Engineering	
Module Leader			**e-mail**		
Module Leader's Acad. Title			**Module Leader's Qualification**		
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date	14/12/2024		**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	١. التطور التاريخي لحقوق الإنسان: دراسة التطور التاريخي لفهم حقوق الإنسان من الحضارات القديمة إلى العصور الحديثة. ٢. حقوق الإنسان في الشرائع السماوية: التركيز على حقوق الإنسان في الإسلام وكيف تم تضمينها في الشريعة الإسلامية. ٣. اعتراف إقليمي بحقوق الإنسان:

	فحص اعتراف الأقاليم الأوروبي، الأمريكي، الإفريقي، الإسلامي، والعربي بحقوق الإنسان. ٤. دور المنظمات غير الحكومية: دراسة دور المنظمات مثل اللجنة الدولية للصليب الأحمر ومنظمة العفو الدولية في حماية حقوق الإنسان. ٥. الإطار القانوني الدولي والإقليمي: التركيز على المواثيق الدولية والإقليمية، مثل الاعلان العالمي لحقوق الإنسان. ٦. تحليل حقوق الإنسان في التشريعات الوطنية: دراسة كيفية ترجمة حقوق الإنسان في التشريعات الوطنية، مع التركيز على الدستور العراقي. ٧. تصنيف حقوق الإنسان وضماناتها: فهم مختلف أشكال حقوق الإنسان والضمانات الدستورية والقضائية والسياسية لحمايتها.
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	1. القدرة على وصف وتحليل التطور التاريخي لحقوق الإنسان منذ الحضارات القديمة حتى العصور الحديثة. 2. القدرة على فحص حقوق الإنسان في حضارة وادي الرافدين وغيرها لفهم التأثير الثقافي على تطورها. 3. تفسير حقوق الإنسان في الإسلام وفهم كيف تم تضمينها في الشريعة الإسلامية. 4. القدرة على تحليل تطور حقوق الإنسان خلال العصور الوسطى والحديثة. 5. الفهم الشامل لاعتراف الأقاليم الأوروبي، الأمريكي، الإفريقي، الإسلامي، والعرب بحقوق الإنسان. 6. القدرة على تقييم دور منظمات مثل اللجنة الدولية للصليب الأحمر ومنظمة العفو الدولية في حماية حقوق الإنسان. 7. القدرة على دراسة وتحليل المواثيق الدولية والإقليمية، بما في ذلك الاعلان العالمي لحقوق الإنسان. 8. القدرة على فحص كيف تم ترجمة حقوق الإنسان في التشريعات الوطنية، مع التركيز على مثال الدستور العراقي. 9. القدرة على تصنيف حقوق الإنسان إلى أشكال فردية وجماعية، وأجيال مثل الحقوق المدنية والسياسية والاقتصادية والاجتماعية. 10. القدرة على تحليل الضمانات الدستورية والقضائية والسياسية لحقوق الإنسان على الصعيدين الوطني والدولي والإقليمي.
Indicative Contents **المحتويات الإرشادية**	فهم التاريخ التطوري لحقوق الإنسان ٣(س) تحليل حقوق الإنسان في الحضارات القديمة ٣(س) فهم حقوق الإنسان في الشرائع السماوية ٣(س) تحليل حقوق الإنسان في العصور الوسطى والحديثة ٣(س) فهم الاعتراف الإقليمي بحقوق الإنسان ٣(س) تقدير دور المنظمات غير الحكومية ٣(س) فهم الإطار القانوني لحقوق الإنسان ٣(س) تحليل حقوق الإنسان في التشريعات الوطنية ٣(س) فهم أشكال وأجيال حقوق الإنسان ٣(س) تحليل ضمانات حقوق الإنسان ٣(س)

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	تشجيع الطلاب على المشاركة في مناقشات تفاعلية حول تطور حقوق الإنسان عبر التاريخ. مشروعات بحثية: توجيه الطلاب في إعداد مشروعات بحثية تستكشف تطور حقوق الإنسان في فترات تاريخية محددة. استخدام التكنولوجيا: تضمين وسائل تكنولوجية لتعزيز تفاعل الطلاب وتقديم المعلومات بشكل أكثر تفاعلية. ورش العمل والتمثيل العملي: إجراء ورش عمل تفاعلية وأنشطة تمثيل لفهم أعمق لمفاهيم حقوق الإنسان. تقديم تقييم مستمر: تقديم تقييم مستمر لفحص تقدم الطلاب وفهمهم لتطور حقوق الإنسان على مر العصور.

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**	2.2
Unstructured SWL (h/sem) **الحمل الدراسي الغير المنتظم للطالب خلال الفصل**	17	**Unstructured SWL (h/w)** **الحمل الدراسي الغير المنتظم للطالب أسبوعيا**	1.13
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 #1-4 , LO #4-9
	Assignments	2	20%	2, 12	LO # 1-4, LO #1,10
	Projects / Lab.				
	Report	1	10% (10)	14	LO # 1-10
Summative assessment	**Midterm Exam**	2 hours	20% (10)	7	LO # 1-7
	Final Exam	3 hours	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
الأسبوع الأول	التطور التاريخي لحقوق الانسان حقوق الانسان في الحضارات القديمة (حضارة وادي الرافدين، والحضارات القديمة الأخرى)
الأسبوع الثـــــاني	حقوق الانسان في الشرائع السماوية مع التركيز على حقوق الانسان في الاسلام. حقوق الانسان في العصور الوسطى والحديثة.
الاسبوع الثـــالث	الاعتراف الاقليمي بحقوق الانسان على الصعيد الأوربي الأمريكي، الأفريقي، الإسلامي، العربي
الأسبوع الـــرابـع	المنظمات غير الحكومية ودورها في حقوق الانسان اللجنة الدولية للصليب الاحمر، منظمة العفو الدولية، منظمة مراقبة حقوق الانسان المنظمة العربية لحقوق الانسان)
الأسبوع الخـــامس	حقوق الانسان في المواثيق الدولية والاقليمية والتشريعات الوطنية. حقوق الانسان في المواثيق الدولية (الاعلان العالمي لحقوق الانسان العهدين الدوليين الخاصين بحقوق الانسان
الأسبوع الســـادس	حقوق الانسان في المواثيق الاقليمية (الاتفاقية الاوربية لحقوق الانسان الاتفاقية الامريكية لحقوق الانسان الميثاق الأفريقي لحقوق الانسان الميثاق العربي لحقوق الانسان
الأسبوع الســـابع	امتحان منتصف الفصل الدراسي
الأسبوع الثـــامن	حقوق الانسان في التشريعات الوطنية (الدستور العراقي)
الأسبوع التاسع	اشكال واجيال حقوق الانسان: اشكال حقوق الانسان الحقوق الفردية، الحقوق الجماعية اجيال حقوق الانسان الجيل الاول الحقوق المدنية والسياسية)، (الجيل الثاني الحقوق الاقتصادية والاجتماعية)، (الجيل الثالث: حقوق الانسان الحديثة ، الوعي الماني والبيتي
الأسبوع العاشر	ضمانات حقوق الانسان وحمايتها على الصعيد الوطني الضمانات الدستورية والقضائية والسياسية
الاسبوع الحادي عشر	ضمانات حقوق الإنسان وحمايتها على الصعيدين الاقليمي والدولي (دور الامم المتحدة، دور المنظمات الاقليمية جريمة الإبادة الجماعية.
الاسبوع الثاني عشر	تصنيف الحريات العامة الحريات الأساسية والفردية حرية الامن والشعور بالاطمئنان حرية الذهاب والاياب، الحرية الشخصية
الأسبوع الثالث عشر	الحريات الفكرية والثقافية حرية الرأي حرية المعتقد حرية التعليم
الأسبوع الرابـــع عشر	حرية الصحافة حرية التجمع حرية تشكيل الجمعيات
الأسبوع الخامس عشر	الحريات الاقتصادية والاجتماعية حرية العمل، حرية التملك حرية التجارة والصناعة

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	**1."حقوق الانسان في العالم العربي: القضايا والتحديات"، تأليف: علي حجازي وجمال شعث. الطبعة الثانية،العام:2017. 2."مبادء حقوق الانسان: المفاهيم والقضايا الحديثة", تأليف: احمد المجالي وغسان حمدان. الطبعة الأولى,العام:2019.**	Yes
Recommended Texts	**1."حقوق الانسان والديمقراطية", تأليف: مصطفى كامل محمود. الطبعة الأولى، العام 2015. 2."تأريخ حقوق الانسان في العصور القديمة والوسطى", تأليف: نبيل رزق: الطبعة الثالثة. العام:2012. 3."حقوق الانسان في العراق: الواقع والتحديات", تأليف: سعدالله عباس. الطبعة الأولى، العام:2014. 4."حقوق الانسان في العراق: المفهوم والتطور", تأليف عبد الكريم السامرائي. الطبعة الأولى، العام 2018. 5."حقوق الانسان في العراق بين التحديات والافاق", تأليف محمد السامرائي و لقاء الحربي.ا لطبعة الأولى, العام:2020.**	No
Websites	The Collage E-Library	

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.

م. م. هارون عبد الفتاح سعيد العبيدي

رئيس القسم

مدرس المادة

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**English Language**			**Module Delivery**	
Module Type	**Basic learning activities**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**MTU1001**				
ECTS Credits	**2**				
SWL (hr/sem)	**50**				
Module Level	1		**Semester of Delivery**	1	
Administering Department	AIET		**College**	Techniques Engineering	
Module Leader	Qamar Dhiya Mirjan		**e-mail**	q8602037@gmail.com	
Module Leader's Acad. Title	Assistant Lecturer		**Module Leader's Qualification**	Msc.	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date	24/10/2023		**Version Number**	1.0	

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الارشادية	
Module Aims **أهداف المادة الدراسية**	**1. know students with essential information in the English language in association with reading, writing and speaking skills, and knowing more English vocabulary.** **2. To understand pronouns, questions and short answers, tenses (present, past and future), adjective, adverb, prepositions of place, punctuation marks and practicing writing.** **3. This module works towards enhancing students' English language competencies along with their technical or professional knowledge.** **4. Enhance students' communication skills in English can result in better job opportunities in the future**
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	**The student will have the ability to:** **1. Know the English skills of reading, and writing.** **2. Recognize other English language skills such as: grammar, vocabulary.** **3. Understand and appreciate the importance of grammar aspects and vocabulary to increase the ability of communicating ideas about the English language.** **4. Understand pronouns, questions and short answers.** **5. Understand tenses present, past and future.** **6. Understand adjectives, adverbs, prepositions of place, and punctuation marks.** **7. Practicing reading and writing.** **8. Enhance students' communication skills in English.**
Indicative Contents **المحتويات الارشادية**	**Indicative content includes the following.** **Part A: Parts of Sentence.** **Pronoun, question and short answer, adjective, adverb, prepositions of place.** **[14 hrs]** **Part B: Tenses** **Past Tense, Present Tense, and Future Tense. [8 hrs]** **Part C: Reading and Writing** **Punctuation marks, and practicing writing [8 hrs]**

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	**The main strategies that will be adopted in delivering this module are:** **- Allow students to actively participate in the learning process with class discussions and exercises that support the initiative.** **- Use didactic questioning through questions to determine student understanding of the material.** **- Writing an assignment and report that encourages students to clarify and organize their thinking and independently research and present on a topic.**

Student Workload (SWL)
الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem)	33	**Structured SWL (h/w)**	2.2
Unstructured SWL (h/sem)	17	**Unstructured SWL (h/w)**	1.13
Total SWL (h/sem)	50		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	20%	5, 10	LO #1-4 LO #4-9
	Assignments	2	10% (10)	2, 12	LO # 1-5 , 5-12
	Projects / Lab.				
	Report	1	10% (10)	14	LO # 1-12
Summative assessment	**Midterm Exam**	2 hours	20% (10)	7	LO # 1-7
	Final Exam	3 hours	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)	
المنهاج الاسبوعي النظري	
Week 1	**Unit 1:** Grammar: Types of Pronouns Vocabulary: Everyday objects, Plurals Reading and Writing Skill
Week 2	**Unit 2:** Grammar: Pronoun, Questions Vocabulary: Countries, Adjective and Nouns Reading and Writing Skill
Week 3	**Unit 3:** Grammar: Negatives, Questions and short answer Vocabulary: Jobs, Personal Information Reading and Writing Skill
Week 4	**Unit 4:** Grammar: Possessive adjectives, Possessive ‘s, common verbs (1): has/have, love, like, work. Vocabulary: The family, The alphabet Reading and Writing Skill
Week 5	**Unit 5**: Present Simple, Questions Vocabulary: Sport, Food and Drink, Verb phrase, Languages and nationalities, Adjective + noun. Reading and Writing Skill
Week 6	**Unit 6:** Grammar: Adverbs of frequency (sometimes, always, never), Questions and Negatives. Vocabulary: The Time, Word that go together Reading and Writing Skill
Week 7	**Unit 7:** Grammar: Question words, Pronouns (subject, object, possessive), that and this. Vocabulary: Adjectives Reading and Writing Skill Grammar: There is/There are, Prepositions of place Vocabulary: Rooms and furniture, Place of town Reading and Writing Skill
Week 8	**Mid exam**
Week 9	**Unit 9:** Grammar: Past Simple Tense - regular verbs Vocabulary: years, have, do, go Reading and Writing Skill
Week 10	**Unit 10:** Grammar: Past Simple Tense - irregular verbs, Questions and Negatives, Time expression, ago. Vocabulary: Weekend activities, Sport and leisure Reading and Writing Skill
Week 11	**Unit 11:** Grammar: can/can’t, Adverbs, Request and offers. Vocabulary: Verb + noun, Adjective + noun, Opposite adjective Reading and Writing Skill
Week 12	**Unit 12:** Grammar: Would like, some and any, like and would like Vocabulary: Places and town, In café. Reading and Writing Skill
Week 13	**Unit 13:** Grammar: Present Continuous Tense Vocabulary: Colors, Clothes, Opposite verbs Reading and Writing Skill

Week 14	**Unit 14:** Grammar: Future Tense, going to Vocabulary: Forms of transport Reading and Writing Skill
Week 15	**Grammar:** Punctuation Marks, Grammar revision Vocabulary: Vocabulary revision Reading and Writing Skill
Week 16	**Preparatory week before the final Exam**

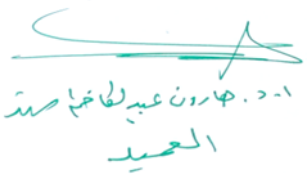
Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts		Yes
Recommended Texts		No
Websites	The Collage E-Library	

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.



رئيس القسم

مدرس المادة

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Introduction To Artificial Intelligence**			**Module Delivery**	
Module Type	**BASIC**			☒ **Theory** ☒ **Lecture** **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**AITE-1103**				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level	1		**Semester of Delivery**	1	
Administering Department	AIET		**College**		
Module Leader	Zainab Hussein Ali		**e-mail**	Zynb4748@gmail.com	
Module Leader's Acad. Title	Assistant Lecturer		**Module Leader's Qualification**	Msc	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date	24/12/2024		**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	**A- Cognitive Objectives** 1. Understanding and learning the principles and concepts of intelligent systems. 2. Enabling students to acquire knowledge and practical computer skills and their applications. 3. Ensuring students comprehend all components and theoretical skills of artificial intelligence systems, as well as their operation. 4. Facilitating students' acquisition of knowledge and understanding of all components of intelligent systems and the benefits of each component. 5. Enabling students to understand the various types of tasks performed by intelligent systems and how they operate. **B – Skill Objectives Specific to the Program** 1. Explaining the skills in detail and applying them practically on the computer while emphasizing the importance of ethical and professional safety rules for students. 2. Equipping students with information and methods to solve practical problems related to all skills. 3. Presenting topics of all applications both practically and theoretically. 4. Adapting the work in skills to ensure active student participation in practical tasks.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	**Learning Outcomes for the Course** 1. Preparing students academically and practically to work in the field of Artificial Intelligence Engineering. 2. Building and equipping students psychologically to fulfill their role as reliable engineers in this domain. 3. Developing students capable of competing with other engineers globally for job opportunities and securing advanced study positions. 4. Enabling students to qualify for external exams conducted by local, regional, or international organizations for further studies or employment. 5. Encouraging students to innovate and think critically in specialization projects, keeping pace with advancements in the field. 6. Providing students with scientific, practical, and personal skills that enable them to solve practical problems and address them using scientific concepts.

Indicative Contents **المحتويات الإرشادية**	1. Introduction to Artificial Intelligence 2. Definition and history of AI. 3. Key characteristics of AI systems. 4. Differences between AI, Machine Learning (ML), and Data Science. 5. Foundations of AI 6. Logic and reasoning in AI. 7. Mathematical foundations: linear algebra, probability, and statistics. 8. Overview of algorithms and computational thinking. 9. Types and Categories of AI 10. Narrow AI vs. General AI vs. Super AI. 11. Reactive machines, limited memory systems, theory of mind, and self-aware AI. 12. AI Techniques and Approaches 13. Symbolic AI (rule-based systems). 14. Machine Learning: supervised, unsupervised, and reinforcement learning. 15. Neural Networks and Deep Learning. 16. Applications of AI 17. Natural Language Processing (NLP): chatbots, language translation. 18. Computer Vision: image recognition, facial recognition. 19. Robotics: autonomous systems and industrial automation. 20. Expert Systems and Decision Support Systems. 21. Healthcare, finance, transportation, and entertainment.

Learning and Teacing Strategies استراتيجيات التعلم والتعليم	
Strategies	**Evaluation Methods** 1. Conducting daily exams with practical and theoretical questions. 2. Allocating grades for participation in challenging competitive questions among students. 3. Assigning grades for homework and reports required from students. 4. Administering semester exams for the curriculum, in addition to a mid- year exam and a final exam.

Student Workload (SWL) الحمل الدراسي للطالب موزع على 15 اسبوع			
Structured SWL (h/sem) **الحمل الدراسي المنتظم للطالب خلال الفصل**	80	**Structured SWL (h/w)** **الحمل الدراسي المنتظم للطالب أسبوعيا**	5.3
Unstructured SWL (h/sem) **الحمل الدراسي غير المنتظم للطالب خلال الفصل**	70	**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, 11	LO #1-4, LO #8-11
	Assignments	1	5% (10)	12	LO # 1-14
	Projects / Lab.	2	20% (10)	Continuous	ALL
	Report	1	5% (10)	13	ALL
Summative assessment	Midterm Exam	4 hr	10% (10)	8	LO # 1-7
	Final Exam	4hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الأسبوع النظري

	Material Covered
Week 1	Introduction to artificial intelligence
Week 2	Artificial intelligence types
Week 4	Artificial intelligence applications
Week 4	Introduction to machine learning
Week 5	Machine learning types
Week6	Machine learning applications
Week 7	Principles of neural networks
Week 8	Advanced neural networks
Week 9	Principles of fuzzy logic
Week 10	Introduction to optimizations
Week 11	Optimizations types
Week 12	Optimizations applications
Week 13	Artificial intelligence ethics
Week 14	Artificial intelligence future
Week 15	Revision
Week 16	Preparatory week before the final Exam

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	The Internet.	Yes
Recommended Texts	MECH6028 - Mechanical Workshop Practice 2 - CIT Modules	No
Websites	https://www.coursera.org/browse/workshop-and-engineering/workshop -	

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.

رئيس القسم

مدرس المادة

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Fundamentals of Electrical Engineering**			**Module Delivery**	
Module Type	**core**			☒**Theory** ☒**Lecture** ☒**Lab** ☒**Tutorial** ☐**Practical** ☐**Seminar**	
Module Code	**AITE-1105**				
ECTS Credits	**5**				
SWL (hr/sem)	**125**				
Module Level	1		**Semester of Delivery**	1	
Administering Department	AIET		**College**	Techniques Engineering	
Module Leader	Morteza Abbas Imran		**e-mail**	mortezaabbas@hilla-unc.edu.iq	
Module Leader's Acad. Title	Assistant Lecturer		**Module Leader's Qualification**	Msc	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date			**Version Number**		

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	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. To develop problem solving skills and understanding of circuit theory through the application of techniques. 2. To understand voltage, current and power from a given circuit. 3. This course deals with the basic concept of electrical circuits. 4. This is the basic subject for all electrical and electronic circuits. 5. To understand Kirchhoff's current and voltage Laws problems. 6. To perform Thevenin's Norton's Theorem.

Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Recognize how electricity works in electrical circuits. 2. List the various terms associated with electrical circuits. 3. Summarize what is meant by a basic electric circuit. 4. Discuss the reaction and involvement of atoms in electric circuits. 5. Describe electrical power, charge, and current. 6. Define Ohm's law. 7. Identify the basic circuit elements and their applications. 8. Discuss the operations of DC circuits in an electric circuit. 9. Discuss the various properties of resistors. 10. Explain the two Kirchhoff's laws used in circuit analysis. 11. Identify the basic circuit elements, Maximum Power Transfer Theorem and Reciprocity Theorem. 12. Describe Thevenin's theorem and Norton's theorem and how they work
Indicative Contents المحتويات الإرشادية	**Indicative content includes the following.** 1- Definition: Symbols and Abbreviations, Units, Electric Circuit & It's Element. The Direct Current Network. , Ohms low, Charge, Force, Work, Power**.(20 hr)** 2- Circuit Theory: DC circuits – Current and voltage definitions, Passive sign convention and circuit elements, Combining resistive elements in series and parallel. Kirchhoff's laws and Ohm's law. Anatomy of a circuit, Network reduction **(20 hr)** 3- Revision problem classes: Resistive networks, voltage and current sources, Thevenin and Norton equivalent circuits, Conversion Delta To Star Connection, Superposition Method, Maximum Power Transfer Theorem, Reciprocity Theorem **(20 hr)**

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 type 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	64	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4.5
Unstructured SWL (h/sem) الحمل الدراسي الغير المنتظم للطالب خلال الفصل	58	**Unstructured SWL (h/w)** الحمل الدراسي الغير المنتظم للطالب أسبوعيا	3.9
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation
تقييم المادة الدراسية

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

Delivery Plan (Weekly Syllabus)

المنهاج الدراسي النظري

Week	Material Covered
Week 1	Symbols And Abbreviations, Units, Electric Circuit & It's Element.
Week 2	The Direct Current Network. Ohms low.
Week 3	Series Circuits (Resistance in Series) Voltage Divider Rule.
Week 4	More Basics: arithmetic expressions, input, formatted output, library, const
Week 5	Parallel Circuits (Resistances in Parallel) Current Divider Rule.
Week 6	Open and Short Circuits, Source Transformation,

Week 7	Series-Parallel Circuits Transformation.
Week 8	Kirchhoff's Laws: - Kirchhoff's current law (KCL) and. Their Use In Network Analysis.
Week 9	Kirchhoff's voltage law (KVL).and Their Use In Network Analysis
Week 10	Midterm exam
Week 11	Conversion Delta To Star Connection And Conversion Star To Delta Connection
Week 12	Superposition Method ,
Week 13	Thevenin's Theorem , Norton's Theorem
Week 14	Maximum Power Transfer Theorem
Week 15	Reciprocity Theorem

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week1	How to use ammeter, voltmeter and ohmmeter.
Week 2	Apply Ohm's Law
Week 3	Apply Kirchhoff's law to measure current
Week 4	Apply Kirchhoff's law to measure voltages
Week 5	Superposition Method
Week 6	Norton's Theorem.
Week 7	Thévenin's Theorem.
Week 8	Delta To Star Connection And Conversion Star To Delta Connection

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Fundamentals of Electric Circuits, C.K. Alexander and M.N.O Sadiku, McGraw-Hill Education	Yes

Recommended Texts	DC Electrical Circuit Analysis: A Practical Approach Copyright Year: 2020, dissidents.	No
Websites	https://www.coursera.org/browse/physical-science-and-engineering/electrical-engineering	

Grading Scheme
مخطط الدرجات

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د. هارون عبدالفتاح صالح العميد

رئيس القسم

مدرس المادة