



**Ministry of Higher Education and Scientific
Research
Scientific Supervision and Evaluation Authority
Quality Assurance and Academic Accreditation
Department**

**Academic Program Description
University of Hilla
College of Engineering Technologies
Department of Artificial Intelligence
Engineering Technology**

2025-2026

University Name: University of Hilla
Faculty / Institute: College of Engineering Technology
Academic Department: Artificial Intelligence Engineering Techniques
Academic or Professional Program Name: Bachelor of Artificial Intelligence Engineering Techniques
Final Degree Awarded: Bachelor of Artificial Intelligence Engineering Techniques
Study System: Semester-Based – Bologna Process
Program Description Prepared On: March 29, 2026
File Completed On: March 29, 2026

Reviewed by Quality Assurance and University Performance Division
Name of Quality Assurance and University Performance Officer: Ali Hussein Ghalta
Date: 29/3/2026



Signature



Approved by the Dean
Professor: Haroun Abaul Kadhim Shahad



1. Vision

The Artificial Intelligence Engineering Department at the College of Engineering Technologies – Al-Hilla University strives to achieve excellence and leadership in the field of artificial intelligence technologies by preparing specialized engineering cadres with advanced scientific and practical skills. These cadres contribute to developing innovative solutions for global challenges, supporting sustainable digital transformation, and promoting innovation and scientific research to build an advanced technological future that meets the requirements of the Fourth Industrial Revolution.

2. Program Mission

The mission of the Artificial Intelligence Engineering Department at the College of Engineering Technologies – Al-Hilla University is to prepare engineers who are scientifically and practically qualified, possessing advanced knowledge and skills in artificial intelligence and its technologies, and capable of developing innovative solutions that address technical and societal challenges. The department is also committed to supporting scientific research, encouraging innovation, and enhancing collaboration with industrial and academic institutions to achieve digital transformation and build a sustainable future aligned with global technological developments.

3. Program Objectives

1. **Develop Human Competencies**
Prepare qualified and distinguished engineers capable of designing and developing solutions based on artificial intelligence technologies in various fields, such as medicine, industry, agriculture, security, and others
2. **Master Modern Technologies**
Train students to use and apply the latest artificial intelligence technologies, including Machine Learning, Deep Learning, Natural Language Processing (NLP), Computer Vision, Data Science, and Robotics
3. **Encourage Innovation and Scientific Research**
Support innovative scientific research that contributes to the development of artificial intelligence technologies and provides effective solutions to real-world problems that serve society
4. **Link Academic Knowledge with Practical Application**
Focus on practical and applied training through projects and real-world programs that meet local and international market needs
5. **Contribute to Digital Transformation**
Provide government and private institutions with qualified engineering and technical cadres to support digital transformation processes and the adoption of artificial intelligence technologies
6. **Meet Labor Market Needs**
Keep pace with labor market requirements by preparing graduates with the knowledge and skills necessary to be effective contributors and leaders in various fields of artificial intelligence

7. Program Accreditation

The program does not have any accreditation

8. External Influences

Monitoring the latest developments in refrigeration and air conditioning, aligning curricula to meet labor market needs, and utilizing international educational resources.

9. Program Structure

Notes*	Percentage	Credit Hours	Number of Courses	Program Structure
Core	%100	136		Institutional Requirements
Core	%100	136		College Requirements
Core	%100			Department Requirements
Core		1	Third Stage	Summer Training
				Others

Academic Program Objectives:

- Prepare graduates to work as technical engineers in the field of artificial intelligence and smart systems.
- Provide graduates with the scientific and technical knowledge necessary to enter the workforce.
- Equip graduates with sufficient knowledge to continue in academia and pursue higher degrees.
- Provide graduates with the practical training required to develop, deploy, and maintain all types of AI and machine learning applications through summer training courses during their studies.
- Prepare graduates to work as system design, deployment, and operation engineers for various intelligent and automated systems.
- Qualify graduates to practice their profession with integrity and transparency, applying professional ethics and data governance through courses on related regulations, such as labor law, intellectual property rights, AI ethics, and the Engineers' Syndicate law.

A. Cognitive Objectives:

- Ability to analyze and break down the components of complex artificial intelligence architectures and data processing pipelines.
- Ability to diagnose technical bugs, algorithmic bias, and performance bottlenecks in various AI systems (software applications, cloud environments, and embedded devices).
- Ability to find suitable technical and engineering solutions to operational failures and improve model accuracy, computational efficiency, and scalability.
- Ability to develop and implement continuous monitoring, evaluation, and maintenance plans for deployed AI systems to ensure robust operation and minimize failures over time.
- Ability to design and evaluate the technical conditions and standards for building, deploying, and operating AI models in compliance with safety, privacy, quality, and algorithmic fairness standards.

A. Program Qualification Objectives:

- Prepare graduates capable of developing, maintaining, and diagnosing faults in various artificial intelligence models and smart automated systems.
- Enable graduates to design and implement intelligent solutions and machine learning pipelines in accordance with data governance requirements, safety standards, and computational efficiency.
- Prepare qualified personnel to work in tech firms, industrial facilities, healthcare, and commercial sectors through the management, deployment, and operation of AI-driven systems.
- Equip graduates with the ability to use modern computational tools, data measurement techniques, and algorithmic control platforms specific to AI and automated systems.
- Qualify students to use modern software engineering tools, frameworks, and technical software for model performance analysis, data modeling, and system design.
- Develop communication skills and the ability to work within a multidisciplinary team on field projects, technical workshops, and software implementations.
- Prepare graduates to keep up with rapid technological developments in artificial intelligence, generative models, edge computing, and smart energy-efficient systems.

Teaching and Learning Methods:

Lectures, practical laboratories, scientific seminars, training courses, and specialized exhibitions in artificial intelligence and smart systems.

Assessment Methods:

Daily quizzes, semester exams, attendance, laboratory reports, and annual evaluations.

B. Affective and Value Objectives:

- Design, maintain, and supervise the deployment and integration of artificial intelligence and automated systems.
- Provide scientific and technical consultancy in data science, machine learning, and AI applications.

C. Personal Development Planning:

- Organize field visits to tech companies, data centers, industrial automation facilities, and specialized artificial intelligence laboratories.
- Participate in specialized exhibitions, hackathons, and conferences in artificial intelligence, robotics, and emerging technologies.
- Conduct training courses and applied workshops in collaboration with global and local technology providers and AI development firms.
- Encourage students to engage in summer training within tech institutions and software companies to enhance practical skills and link theoretical knowledge with application

D. Admission Criteria:

- Graduates of the General Secondary Education – Science branch (Biological, Applied, or General Science).
- Students graduating from technical and vocational institutes (Information Technology, Computer Science, and Electronics branches).
- Students graduating from industrial vocational preparatory schools (Computer, IT, Electronics, and Control branches).



First stage

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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	
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	- Learn the basic steps involved in entering, compiling, and executing and debugging a program. - Apply structured programming control concepts of sequence, selection and repetition in the C++ language. - Effectively use scalar data types float, int, and char. - Manipulate elementary arrays. - Design and effectively use functions and parameters. - 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.
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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/N umber	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.				

د. هادي عبد الحاميد
الحيد

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	
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.
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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 أسبوعياً	4.5
Unstructured SWL (h/sem) الحمل الدراسي الغير المنتظم للطالب خلال الفصل	58	Unstructured SWL (h/w) الحمل الدراسي الغير المنتظم للطالب أسبوعياً	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.

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أ. د. عبد الحامد
العبد



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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] <u>Part D – Vector Spaces and Diagonalization.</u> 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]
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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.
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Student Workload (SWL)

الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل المنتظم للطالب خلال الفصل	67	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعياً	4.5
Unstructured SWL (h/sem) الحمل الغير المنتظم للطالب خلال الفصل	58	Unstructured SWL (h/w) الحمل الدراسي الغير المنتظم للطالب أسبوعياً	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 الأسبوعي

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
	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.

د. د. هادي عبد الحاميد
الحمد

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	
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 تكنولوجيا 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)

المناهج الاسبوعي النظري

الأسبوع الأول	التطور التاريخي لحقوق الانسان حقوق الانسان في الحضارات القديمة (حضارة وادي الرافدين، والحضارات القديمة الأخرى)
الأسبوع الثاني	حقوق الانسان في الشرائع السماوية مع التركيز على حقوق الانسان في الاسلام. حقوق الانسان في العصور الوسطى والحديثة.
الاسبوع الثالث	الاعتراف الاقليمي بحقوق الانسان على الصعيد الاوربي الأمريكي، الأفريقي، الإسلامي، العربي
الأسبوع الرابع	المنظمات غير الحكومية ودورها في حقوق الانسان اللجنة الدولية للصليب الاحمر، منظمة العفو الدولية، منظمة مراقبة حقوق الانسان المنظمة العربية لحقوق الانسان
الأسبوع الخامس	حقوق الانسان في المواثيق الدولية والاقليمية والتشريعات الوطنية. حقوق الانسان في المواثيق الدولية (الاعلان العالمي لحقوق الانسان العهدين الدوليين الخاصين بحقوق الانسان
الأسبوع السادس	حقوق الانسان في المواثيق الاقليمية (الاتفاقية الاوربية لحقوق الانسان الاتفاقية الامريكية لحقوق الانسان الميثاق الأفريقي لحقوق الانسان الميثاق العربي لحقوق الانسان
الأسبوع السابع	امتحان منتصف الفصل الدراسي
الأسبوع الثامن	حقوق الانسان في التشريعات الوطنية (الدستور العراقي)
الأسبوع التاسع	اشكال واجبال حقوق الانسان: اشكال حقوق الانسان الحقوق الفردية، الحقوق الجماعية اجمال حقوق الانسان الجيل الاول الحقوق المدنية والسياسية)، (الجيل الثاني الحقوق الاقتصادية والاجتماعية)، (الجيل الثالث: حقوق الانسان الحديثة ، الوعي الماني والبيئي
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 الاساسية والفردية حرية الامن والشعور بالاطمئنان حرية الذهاب والاياب، الحرية الشخصية
الأسبوع الثالث عشر	الحريات الفكرية والثقافية حرية الرأي حرية المعتقد حرية التعليم
الأسبوع الرابع عشر	حرية الصحافة حرية التجمع حرية تشكيل الجمعيات
الأسبوع الخامس عشر	الحريات الاقتصادية والاجتماعية حرية العمل، حرية التملك حرية التجارة والصناعة

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."مباىء 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.

١- د. هارون عبد الحاميد
الحمد



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رئيس القسم

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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 الإرشادية

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 الإرشادية	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.
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Student Workload (SWL)

الحمل الدراسي للطلاب 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
	Assignments	2	10% (10)	LO #1-4 LO #4-9
	Projects / Lab.			LO # 1-5 , 5-12
	Report	1	10% (10)	14
Summative assessment	Midterm Exam	2 hours	20% (10)	7
	Final Exam	3 hours	50% (50)	16
Total assessment		100% (100 Marks)		



Delivery Plan (Weekly Syllabus)

المناهج 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
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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.				

د. هادي عبد الحاميد
المعيد



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.
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Learning and Teaching 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 أسبوعياً	5.3
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	70	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	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 الأسبوعي 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.



د. هادي عبد الحاميد محمد
العقيد

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	
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 law, 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.
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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 أسبوعياً	4.5
Unstructured SWL (h/sem) الحمل الدراسي الغير المنتظم للطالب خلال الفصل	58	Unstructured SWL (h/w) الحمل الدراسي الغير المنتظم للطالب أسبوعياً	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 law.
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				
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.				

د. د. هادي عبد الحاميد
الحديد



رئيس القسم

مدرس المادة

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	Computer Fundamentals		Module Delivery
Module Type	Basic		☒ Theory ☒ Lecture ☒ Lab ☒ Tutorial ☐ Practical ☐ Seminar
Module Code	AITE1202		
ECTS Credits	7		
SWL (hr/sem)	175		
Module Level	1	Semester of Delivery	
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	The module aims to: 1- To provide students with a foundational understanding of hardware, software, computing, data, and information. 2- To familiarize students with the various components of a computer, including hardware parts, memory types, and input/output units. 3- To develop proficiency in using common operating systems and graphical user interfaces, enabling students to navigate and manage files effectively. 4- To equip students with the skills necessary for creating, formatting, and managing documents using word processing software.

	5- To introduce students to basic spreadsheet concepts, including data manipulation, formulas, and functions for data analysis. 6- To foster skills in creating and delivering presentations using presentation software, focusing on effective communication and visual design. 7- To build an understanding of internet concepts, including networking basics, web browsing, and effective use of search engines. 8- To teach students the principles of electronic communication, including email management and document collaboration. 9- To provide students with the knowledge and skills to identify and troubleshoot common computer hardware and software problems. 10- To encourage the practical application of learned concepts in real-world scenarios, enhancing problem-solving and critical thinking skills.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	By the end of the module, students should be able to: 1. Identify and Describe Key Concepts: Students will be able to explain fundamental concepts of hardware, software, computing, data, and information. 2. Recognize Computer Components: Students will demonstrate an understanding of the main components of a computer system, including hardware parts, memory types, and I/O units. 3. Navigate Operating Systems: Students will proficiently navigate and utilize common operating systems and graphical user interfaces for file management and application usage. 4. Create and Format Documents: Students will be able to create, edit, and format text documents using word processing software, employing various tools and features effectively. 5. Utilize Spreadsheets for Data Management: Students will demonstrate the ability to manipulate cells, use formulas and functions, and perform basic data analysis using spreadsheet software. 6. Develop Effective Presentations: Students will create engaging presentations using presentation software, including designing slides and delivering content clearly. 7. Navigate the Internet Effectively: Students will understand and apply concepts related to internet use, including web browsing, search engine utilization, and understanding URLs. 8. Manage Electronic Communications: Students will demonstrate proficiency in using email for communication, including sending, receiving, and organizing messages and collaborating on documents. 9. Apply Troubleshooting Techniques: Students will identify common hardware and software problems and apply basic troubleshooting techniques to resolve issues. 10. Integrate Knowledge into Practical Scenarios: Students will apply their acquired knowledge and skills to real-world scenarios, demonstrating problem-solving and critical thinking abilities. 

**Indicative
Contents**

المحتويات
الإرشادية

1. Introduction to Computers: [4 hrs.]
 - Definition of Computers
 - History and Evolution of Computers
 - Types of Computers: Desktops, laptops, tablets, servers.
2. Hardware and Software Concepts: [4 hrs.]
 - Hardware Components:
 - Central Processing Unit (CPU)
 - Memory (RAM, ROM, Cache)
 - Storage Devices (HDD, SSD, USB drives)
 - Input Devices (keyboard, mouse, scanner)
 - Output Devices (monitor, printer, speakers)
 - Software Components:
 - System Software (Operating Systems)
 - Application Software (Word processors, spreadsheets, etc.)
3. Data and Information: [4 hrs.]
 - Definitions of Data and Information
 - Data Processing Cycle
 - Types of Data: Structured vs. unstructured data.
4. Information Electronics and Communication Technology (IECT) : [4 hrs.]
 - Applications of IECT
 - Impact on Society and Business
5. Connecting Devices: [4 hrs.]
 - Input/ Output Devices: Installation and configuration.
 - Peripherals: Printers, scanners, external drives.
 - Computer Ports: USB, HDMI, Ethernet, etc.
6. Operating Systems and GUI: [8 hrs.]
 - Operating System Functions: Resource management, user interface.
 - Common Operating Systems: Windows, macOS, Linux.
 - Graphical User Interface (GUI):
 - Using the mouse and keyboard.
 - Common icons and their functions.
 - Menus and menu-navigation.
 - Managing windows and applications.
7. Word Processing: [8 hrs.]
 - Creating and Managing Documents
 - Text Manipulation: Inputting and editing text.
 - Formatting Techniques: Fonts, sizes, colors, and styles.
 - Table Creation and Management
 - Spell Check and Language Tools
 - Printing Documents
8. Spreadsheet Basics: [8 hrs.]
 - Introduction to Spreadsheet Software
 - Cell Manipulation: Entering and editing data.
 - Formulas and Functions: Basic arithmetic, statistical functions
 - Data Analysis Techniques



	• Printing Spreadsheets 9. Presentation Software: [8 hrs.] • Creating Presentations: Slide design and content organization. • Using Visuals: Images, charts, and graphs. • Presenting Slides: Techniques for effective delivery. • Printing Handouts and Slides 10. Internet and Web Browsers: [8 hrs.] • Introduction to Computer Networks: LAN, WAN. • Understanding the Internet and its Applications • Web Browsing: Using browsers effectively. • Search Engines: Techniques for efficient searching. • Understanding URLs, Domain Names, and IP Addresses 11. Communications and Emails: [4 hrs.] • Basics of Electronic Mail: Features and protocols. • Setting Up an Email Account • Sending and Receiving Emails • Managing Email Correspondence • Document Collaboration Tools 12. Computer Troubleshooting: [4 hrs.] • Common Hardware Problems: Identification and solutions. • Common Software Issues: Errors, crashes, and performance issues. • Basic Troubleshooting Techniques: Steps and tools for diagnostics. 13. Review and Assessment: [8 hrs.] • Mid-Term Examination: Assessing knowledge and skills acquired. • Practical Assignments: Hands-on tasks to reinforce learning.
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Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The learning and teaching strategies for the module on Computer Principles and operating systems can include: 1. Lectures and Presentations: The instructor can deliver lectures and presentations to introduce and explain key concepts, theories, and principles related to computer fundamentals and operating systems. This can help students develop a foundational understanding of the subject matter. 2. Practical Demonstrations: Hands-on practical demonstrations can be conducted to illustrate the usage of different computer components, software applications, and operating system functionalities. This can enhance students' understanding of the practical aspects of computer systems. 3. Group Discussions and Collaborative Learning: Engaging students in group

	discussions and collaborative learning activities can promote active participation and deeper understanding. Students can discuss and analyze case studies, real- life examples, and scenarios related to computer fundamentals and operating systems. 4. Laboratory Exercises: Practical laboratory exercises can provide students with opportunities to apply their knowledge and skills in a controlled environment. They can work on computer hardware, software installations, operating system configurations, and troubleshooting tasks, allowing them to gain practical experience. Assignments and Projects: Assignments and projects can be assigned to students to encourage independent learning and critical thinking. They can involve research, analysis, problem-solving, and the application of concepts learned in the module. This can help students develop their skills and deepen their understanding
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Student Workload (SWL)			
الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	94	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعياً	6.2
Unstructured SWL (h/sem) الحمل الدراسي الغير المنتظم للطالب خلال الفصل	81	Unstructured SWL (h/w) الحمل الدراسي الغير المنتظم للطالب أسبوعياً	5.46
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	175		

Module Evaluation					
تقييم المادة الدراسية					
As		Time/N umber	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 Computer: Concepts of Hardware and Software with their components; Concept of Computing, Data and Information; Applications of Information Electronics and Communication Technology (IECT); Connecting input/output devices, and peripherals to CPU.
Week 2-3	Computer Components: Computer Portions, Hardware Parts, I/O Units, Memory Types, Basic CPU Components, Computer Ports, Personal Computer (Features and Types).
Week 4-5	Operating System and Graphical User Interface (GUI): Operating System; Basics of Common Operating Systems; The User Interface, Using Mouse Techniques; Use of Common Icons, Status Bar, Using Menu and Menu-selection, Concept of Folders and Directories, Opening and closing of different Windows; Creating Short cuts.
Week 6-7	Word Processing: Word Processing Basics; Opening and Closing of documents; Text creation and Manipulation; Formatting of text; Table handling; Spell check, language setting and thesaurus; Printing of word document.
Week 8	Review and Mid Exam
Week 9-10	Spread Sheet: Basics of Spreadsheet; Manipulation of cells, Formulas and Functions; Editing of Spread Sheet, printing of Spread Sheet.
Week 11-12	Presentation Software: Basics of presentation software; Creating Presentation; Preparation and Presentation of Slides; Slide Show; taking printouts of presentation / handouts.
Week 13	Introduction to Internet and Web Browsers: Computer networks Basic: LAN, WAN; Concept of Internet and its Applications; connecting to internet, World Wide Web; Web Browsing software's, Search Engines; Understanding URL ; Domain name, IP Address.
Week 14	Communications and Emails: Basics of electronic mail; Getting an email account; Sending and receiving emails; Accessing sent emails; Using Emails, Document collaboration.
Week 15	Computer Troubleshooting: Identifying and solving common hardware and software problems that computer users encounter. Basic troubleshooting techniques and tools for diagnosing and resolving issues.
Week 16	Preparatory week before the final Exam
Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Introduction to Computer: • Concepts of hardware and software components. • Fundamentals of computing, data, and information. • Applications of information electronics and communication technology (IECT). • Connecting input/output devices and peripherals to 

	CPU.
Week 2-3	Computer Components: • Exploration of computer portions and hardware parts. • Identifying I/O units, memory types, and basic CPU components. • Familiarizing with computer ports and personal computer features.
Week 4-5	Operating System and GUI: • Basics of common operating systems. • Navigating the user interface using mouse techniques. • Utilizing common icons, status bar, menus, and directories. • Opening, closing, and creating shortcuts for different windows.
Week 6-7	Word Processing: • Exploring word processing basics. • Opening and closing documents. • Text creation, manipulation, and formatting. • Handling tables, spell check, language settings, and thesaurus. • Printing word documents.
Week 8	Review and Mid-Exam
Week 9-10	Spreadsheet: • Spreadsheet software basics. • Manipulation of cells, formulas, and functions. • Editing and printing spreadsheets.
Week 11-12	Presentation Software: • Fundamentals of presentation software. • Creating presentations. • Preparing and delivering slide shows. • Taking printouts of presentations and handouts.
Week 13	Introduction to Internet and Web Browsers • Computer networking concepts: LAN, WAN. • Concept of the internet and its applications. • Connecting to the internet and exploring the World Wide Web. • Using web browsing software and search engines. • Understanding URLs, domain names, and IP addresses.
Week 14	Communications and Emails • Basics of electronic mail. • Setting up email accounts. • Sending, receiving, and accessing emails.
Week 15	Computer Troubleshooting: • Identifying and solving common hardware issues. • Identifying and solving common software problems. • Applying basic troubleshooting techniques and tools.
Week 16	Preparatory week before the final Exam

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	[1] G. Brown and D. Watson, "Cambridge IGCSE Information and Communication Technology," 3rd ed. Cambridge, U.K.: Cambridge Univ. Press, 2020. [2] A. Evans, K. Martin, and M. A. Poatsy, "Technology in Action Complete," 16th ed. Boston, MA, USA: Pearson, 2020	Yes
Recommended Texts	3] 2016 " , أساسيات الحاسوب , الخضر علي الخضر بحات	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.				

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عبد الحاميد صمد
الحمد



رئيس القسم

مدرس المادة

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	Engineering Drawing		Module Delivery
Module Type	Support		Theor Lecture ☒ Lab Tutorial Practical Seminar
Module Code	AITE1204		
ECTS Credits	7		
SWL (hr/sem)	175		
Module Level	1	Semester of Delivery	
Administering Department	AIET	College	
Module Leader	Ali Tawfeeq Lateef Hammoodi	e-mail	Ali2111ban@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	1. To develop spatial visualization skills: Enhance your ability to visualize and mentally manipulate objects in three-dimensional space based on two-dimensional drawings. Strengthen your spatial awareness and improve your understanding of complex engineering design 2. Learn sketching and taking field dimensions. 3. Take data and transform it into graphic drawings. 4. Learn basic engineering drawing formats. 5. Learn basic AutoCAD skills. 6. Learn how to draw 2D drawings in AutoCAD
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Identify the basic of AutoCAD 2. Explain Drawing settings 3. How to drawing: Point, Line, Multiline, P line, Spline, X line, Rectangle. 4. How to drawing: Donut, Polygon, Circle, Arc, Ellipse 5. List Modify Tools - Identify: Erase, Undo, Redo, Explode, Move, Copy, Rotate, Mirror, 6. Identify Array, Align, Scale, Stretch, Lengthen, Trim, Extend, Break, Join, Chamfer, Fillet. 7. Explain Zoom, Pan. 8. How to assign: Dimension - Linear, Aligned, Radius, Diameter, Center Mark, Angle, Arc length, Continuous, Baseline, Tolerance, Dimension Space, Dimension Break, Jogged radius, Ordinate dimensions. 9. Dealing with: Text, Style, M text, Scale text, Spell, 10. Knowing the Hatching Objects. 11. Drawing 3d modeling. 12. Drawing the Exercises.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. --AutoCAD Software, drawing settings, Drawing Tools, Line, Circle, Arc, Ellipse, Donut, Polygon, Rectangle, Point, Multiline, P line, Spline, X line. [20 hrs.] --Modify Tools Erase, Undo, Redo, Explode, Move, Copy, Rotate, Mirror, Array, Align, Scale, Stretch, Lengthen, Trim, Extend, Break, Join, Chamfer, Fillet. [4 hrs.] --Display Control Zoom, Pan, Redraw, Clean Screen. [4 hrs.] --Dimension - Linear, Aligned, Radius, Diameter, Center Mark, Angle, Arc length, Continuous, Baseline, Tolerance, Dimension Space, Dimension Break, Jogged radius, Ordinate dimensions. [4 hrs.] --Hatching Objects [4hrs] --Text, Style, M text, Scale text, Spell, [4 hrs.] --3D MODELLING, Convert 2D to 3D, Solid Editing [20 hrs.]



Learning and Teaching Strategies

Strategies	1. Familiarize with the Software: Before diving into engineering drawing concepts, it's important to become familiar with the AutoCAD software. This includes understanding the user interface, basic tools, and commands. With introductory tutorials or online resources that cover the basics of AutoCAD. 2. Step-by-Step Instructions: Break down complex drawing tasks into smaller, manageable steps. Provide step-by-step instructions and demonstrations using AutoCAD, showing students how to execute each step effectively. This approach helps students understand the workflow and build their confidence. 3. Visual Aids and Examples: Utilize visual aids, such as slides, diagrams, and examples, to reinforce concepts. Show real-world engineering drawings and explain how they were created using AutoCAD. Visual representations can enhance understanding and make abstract concepts more tangible. 4. Group Activities and Collaboration: Promote collaboration among students by assigning group activities or projects. This allows them to work together, share knowledge, and learn from one another. Encourage students to discuss their approaches and problem-solving techniques related to engineering drawing in AutoCAD. 5. Provide Feedback: Regularly provide constructive feedback on students' drawings. Highlight areas for improvement, suggest alternative methods, and point out common mistakes. This feedback loop is crucial for students to refine their skills and develop a deeper understanding of engineering drawing principles.
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Student Workload (SWL)

الحمل الدراسي للطالب موزع على 15 اسبوع

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	94	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعياً	6.26
Unstructured SWL (h/sem) الحمل الدراسي الغير المنتظم للطالب خلال الفصل	81	Unstructured SWL (h/w) الحمل الدراسي الغير المنتظم للطالب أسبوعياً	5.4
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	175		

Module Evaluation

تقييم المادة الدراسية

	Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	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 Lab. Syllabus)

المنهاج الأسبوعي للمختبر

	Material Covered
Week1	Introducing of Engineering Drawing
Week 2	Drawing settings of AutoCAD
Week 3	Drawing Tools
Week 4	Point, Line, Multiline, P line, Spline, X line.
Week 5	Circle, Arc, Ellipse
Week 6	Modify Tools Erase, Undo, Redo, Explode, Move, Copy, Rotate, Mirror, Array, Align, Scale, Stretch, Lengthen, Trim, Extend, Break, Join, Chamfer, Fillet. Display Control Zoom, Pan, Redraw, Clean Screen
Week 7	Mid exam
Week 8	Dimension - Linear, Aligned, Radius, Diameter, Center Mark, Angle, Arc length, Continuous, Baseline, Tolerance, Dimension Space, Dimension Break, Jogged radius, Ordinate dimensions
Week 9	Annotation Tools Text, Style, M text, Scale text, Spell
Week 10	Hatching Objects
Week 11-12-13	3D modeling
Week 13	Convert 2D To 3D
Week 14	Solid Editing
Week 15	Exercises drawing
Week 16	Preparatory week before the final Exam



Learning and Teaching Resources		
مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	Introduction to AutoCAD 2010 By Alf Yarwood Copyright 2009	Yes
Recommended Texts	An Introduction to Autodesk Inventor 2010 and AutoCAD 2010 Unbnd Edition by Randy Shih	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.

د. هادي عبد الرحمن محمد
العقيد



رئيس القسم

مدرس المادة

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	Applied Mathematics		Module Delivery
Module Type	Support or related learning activity		☒ Theory ☒ Lecture ☐ Lab ☒ Tutorial ☐ Practical ☐ Seminar
Module Code	AITE1201		
ECTS Credits	7		
SWL (hr/sem)	175		
Module Level	1	Semester of Delivery	
Administering Department	AIET	College	
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	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	7. To understand concepts of linear algebra. 8. To get a grasp of various methods to solve systems of linear equations. 9. To compute linear transformations. 10. To be able to determine Eigenvalues and Eigenvectors. 11. To perform matrix diagonalization.

Module Learning Outcomes مخرجات التعلم للمادة الدراسية	16. Recognize Vectors concepts, notation and Operations. 17. Discuss dot product, cross product, Orthogonal and orthonormal vectors. 18. Discuss the terms Diagonal, Triangular, Symmetric, Square Matrix, and Transpose of a Matrix. 19. Describe the matrix operations {addition, subtraction, scalar multiplication, multiplication}. 20. Identify Determinant and Inverse for Nonsingular matrices. 21. Discuss aspects about System of Linear Equations (Linear Equations, Linear Equations Solution, Matrix equations.). 22. Identify Row operations, row-echelon form “triangular”, Rank of a Matrix, reduced row-echelon form, Augmented Matrix. 23. Discuss Gaussian elimination. 24. Explain Gauss–Jordan elimination and Solving Systems with Inverses. 25. Explain Cramer's Rule. 26. Explain Linear Combinations of Vector, span. 27. Explain Linear Dependence and Independence, Basis and Dimension, Rank of a Matrix. 28. Recognize Linear Transformations. 29. Discuss Polynomials of Matrices, Characteristic Polynomial, Cayley–Hamilton Theorem. 30. 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] <u>Part D – Vector Spaces and Diagonalization.</u> 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]
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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.
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Student Workload (SWL)

الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل المنتظم للطالب خلال الفصل	93	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعياً	6.2
Unstructured SWL (h/sem) الحمل الغير المنتظم للطالب خلال الفصل	82	Unstructured SWL (h/w) الحمل الدراسي الغير المنتظم للطالب أسبوعياً	5.46
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	175		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	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
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
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المعيد



رئيس القسم

مدرس المادة

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	Arabic Language		Module Delivery
Module Type	Basic learning activities		☒ Theory ☐ Lecture ☐ Lab ☐ Tutorial ☐ Practical ☐ Seminar
Module Code	AITE1205		
ECTS Credits	2		
SWL (hr/sem)	50		
Module Level	1	Semester of Delivery	
Administering Department	AIET	College	
Module Leader		e-mail	
Module Leader's Acad. Title		Module Leader's Qualification	M.
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 الإرشادية

Module Aims أهداف المادة الدراسية	أهداف المادة الدراسية هي ان يكون الطالب قادراً على أن: 1. يتعرف على أنواع الأخطاء اللغوية المشتركة وتوضيح أسبابها وكيفية تجنبها. 2. يتعلم القواعد المتعلقة بالتاء المربوطة والطويلة والتاء المفتوحة وكيفية كتابتها بشكل صحيح. 3. يتعلم قواعد كتابة الألف الممدودة والمقصورة واستخدام الحروف الشمسية والقمرية بشكل صحيح. 4. التعرف على الضاد والطاء ومعرفة كيفية التمييز بينهما في الكتابة. 5. يتعلم طرق كتابة الهمزة بشكل صحيح وفقاً للقواعد اللغوية. 6. التعرف على علامات الترقيم واستخدامها بشكل صحيح في النصوص. 7. يفهم الفرق بين الاسم والفعل والتمييز بينهما في الجمل. 8. يفهم المفاعيل وكيفية استخدامها في التعبير عن النصوص. 9. يتعلم الأرقام والعدد واستخدامها في التعبير عن الكميات. 10. يتجنب الأخطاء اللغوية الشائعة في سياقات عملية لتعزيز فهم القواعد وتحسين المهارات اللغوية. 11. يدرس النون والتنوين وفهم معاني حروف الجر واستخداماتها بشكل صحيح في الجمل. 12. يركز على الجوانب الشكلية للخطاب الإداري وكيفية كتابته بأسلوب صحيح في الجمل. 13. التعرف على لغة الخطب الإدارية وفهم استخدامها في التواصل الإداري. 14. يفهم نماذج من المراسلات الإدارية لتطبيق المفاهيم والمهارات المكتسبة في الخطاب الإداري.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	مخرجات التعلم للمادة الدراسية هي: 1. قدرة الطالب على تحليل وتعريف الأخطاء اللغوية المشتركة وتطبيق القواعد الصحيحة لتجنبها. 2. القدرة على استخدام القواعد اللغوية المتعلقة بالتاء المربوطة والطويلة والتاء المفتوحة بشكل صحيح. 3. قدرة الطالب على استخدام الألف الممدودة والمقصورة بشكل صحيح واستخدام الحروف الشمسية والقمرية بطريقة صحيحة. 4. تمكين الطلاب من التمييز بين الضاد والطاء وتطبيق القواعد الصحيحة في الكتابة. 5. القدرة على كتابة الهمزة بشكل صحيح وفقاً للقواعد اللغوية. 6. استخدام علامات الترقيم بشكل صحيح في الجمل. 7. فهم الطلاب الفرق بين الاسم والفعل وتمكينهم من استخدامها بشكل صحيح في الجمل. 8. القدرة على استخدام المفاعيل بشكل صحيح في النصوص المكتوبة. 9. استخدام الأرقام والعدد بطريقة صحيحة للتعبير عن الكميات. 10. التمكن من تطبيق الأخطاء اللغوية الشائعة في سياقات عملية وتصحيحها بشكل مناسب. 11. فهم استخدام النون والتنوين ومعاني حروف الجر واستخدامها بشكل صحيح في الجمل. 12. القدرة على كتابة الخطاب الإداري بأسلوب صحيح ومناسب وفهم لغة الخطاب الإداري. 13. تطبيق المفاهيم والمهارات المكتسبة في كتابة المراسلات الإدارية بشكل صحيح وفعال.
Indicative Contents المحتويات الإرشادية	المحتويات الإرشادية في مادة اللغة العربية تشمل مجموعة من المفاهيم والمواضيع التي يتم تغطيتها خلال عملية التعلم ومن بين المحتويات الإرشادية المهمة: 1. مقدمة عن الأخطاء اللغوية والتعريف بالتاء المربوطة والتاء المطولة والتاء المفتوحة. (4 ساعات) 2. قواعد كتابة الألف الممدودة والمقصورة والتعرف على الحروف الشمسية والقمرية. (4 ساعات) 3. دراسة الضاد والطاء وتعلم طرق كتابتها بشكل صحيح. (4 ساعات) 4. تعلم كتابة الهمزة بشكل صحيح وفقاً للقواعد اللغوية. (4 ساعات) 5. دراسة علامات الترقيم وتعلم استخدامها بشكل صحيح في النصوص اللغوية. (4 ساعات) 6. التعرف على الاسم والفعل والتفريق بينهما وفهم القواعد المتعلقة بهما. (4 ساعات) 7. دراسة المفاعيل وتعلم استخدامها في الجمل اللغوية. (4 ساعات) 8. التعرف على الأعداد واستخدامها بشكل صحيح في العبارات والجمل. (4 ساعات) 9. دراسة الأخطاء اللغوية الشائعة وتطبيقاتها في النصوص اللغوية. (4 ساعات) 10. تعلم استخدام النون والتنوين وفهم معاني حروف الجر واستخدامها بشكل صحيح في الجمل. (3 ساعات) 11. التعرف على الجوانب الشكلية للخطاب الإداري وفهم لغته وقواعده. (3 ساعات) 12. دراسة نماذج من المراسلات الإدارية وتطبيقها في الكتابة. (3 ساعات)



Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies	استراتيجيات التعلم والتعليم المستخدمة في مادة اللغة تشمل مجموعة من متنوعة من النهج والتقنيات التي تعزز عملية التعلم للطلاب، من بين هذه الاستراتيجيات:
	1. التفاعل النشط: يتم تشجيع الطلاب على المشاركة والمشاركة الفعالة في الدروس من خلال المناقشات الجماعية والأنشطة التفاعلية.
	2. التعلم التعاوني: يشجع التعاون والتعاون بين الطلاب من خلال العمل الجماعي والمشاريع الجماعية، حيث يتعاون الطلاب مع بعضهم البعض لتحقيق أهداف التعلم المحددة.
	3. التطبيق العملي: يتم توفير فرص للطلاب لتطبيق المفاهيم والمهارات المكتسبة في سياقات عملية وواقعية، مما يعزز التفاعل الفعال مع المادة.
	4. استخدام التقنيات الحديثة: يستفيد الطلاب من استخدام التكنولوجيا في عملية التعلم، مثل استخدام الحواسيب والانترنت للبحث والتعلم الذاتي.
	5. توفير ردود فعل فورية: يتم توفير ردود فعل فورية وتقييم مستمر للطلاب، سواء عن طريق التقييمات الشفهية أو الكتابية، مما يساعدهم على تحسين أدائهم وتطوير مهاراتهم.
	6. التنوع في وسائل التواصل: يتم استخدام مجموعة متنوعة من وسائل التواصل والتعليم، مثل المحاضرات التوضيحية، والمناقشات الجماعية، والأنشطة العلمية، والعروض التقديمية، لتلبية احتياجات وأساليب التعلم المختلفة للطلاب.
	7. باستخدام هذه الاستراتيجيات، يتم تعزيز التفاعل والتعلم الفعال للطلاب وتحفيزهم على المشاركة واكتساب المعرفة والمهارات بشكل شامل وشيق.

Student Workload (SWL)

الحمل الدراسي للطلاب 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/N umber	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)

المناهج الاسبوعي النظري		
الأسبوع الأول	مقدمة عن الأخطاء اللغوية – التاء المربوطة والطويلة والتاء المفتوحة	٨-١
الأسبوع الثاني	قواعد كتابة الالف الممدودة والمقصورة – الحروف الشمسية والقمرية	١٤-٩
الاسبوع الثالث	الضاد والظاء	١٩-١٥
الأسبوع الرابع	كتابة الهمزة	٣٠-٢٠
الأسبوع الخامس	علامات الترقيم	٣٦-٣١
الأسبوع السادس	الاسم والفعل والتفريق بينهما - المفاعيل	٥٠-٣٧
الأسبوع السابع	الامتحان النصفى	
الأسبوع الثامن	العدد	٦١-٥١
الأسبوع التاسع والعاشر	تطبيقات الأخطاء اللغوية الشائعة	٦٩-٦٢
الاسبوع الحادي عشر	النون والتنوين - معاني حروف الجر	٧٥-٧٠
الاسبوع الثاني عشر	الجوانب الشكلية للخطاب الإداري	٨٠-٧٦
الأسبوع الثالث عشر والرابع عشر	لغة الخطاب الإداري	٨٦-٨١
الأسبوع الخامس عشر	نماذج من المراسلات الإدارية	
الأسبوع السادس عشر	الاستعداد للامتحان النهائي	

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.				

أ.د. هادي عبد الحاميد
الععيد



رئيس القسم

أ.د. صباح عطوي
أستاذ المادة

مدرس المادة

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	Engineering Workshops		Module Delivery
Module Type	Support or related learning activity		☐ Theory ☐ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar
Module Code	AITE1203		
ECTS Credits	5		
SWL (hr/sem)	125		
Module Level	1	Semester of Delivery	
Administering Department	AIET	College	
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	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	The objective of studying Electrical, Electronic, and Mechanical workshops is to enable students to acquire the necessary skills and knowledge to deal with electrical, electronic, and mechanical systems and devices. This subject aims to teach students how to diagnose faults, repair systems, and perform maintenance on these systems and devices. By studying Electrical, Electronic, and Mechanical workshops, students can understand the principles of electricity, electronics, and mechanics, as well as how to read engineering diagrams and use various tools and equipment to work on them. They also learn how to diagnose faults, repair them, and properly maintain different devices in a safe manner. In general, studying this subject aims to prepare students to become skilled technicians in the field of electrical, electronic, and mechanical engineering. They can work in areas such as industrial maintenance and repair, electrical and electronic installations, automation and robotics, medical devices, and other modern technologies
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	The learning outcomes of studying Electrical, Electronic, and Mechanical workshops include: 1. Acquisition of diagnostic and repair skills: Students learn how to analyze problems, identify faults in electrical, electronic, and mechanical systems, and implement appropriate repair procedures. 2. Understanding of electrical, electronic, and mechanical principles: Students gain knowledge of engineering and technical fundamentals related to electricity, electronics, and mechanics, including reading engineering diagrams and practical understanding of circuits, electronic devices, and mechanical components. 3. Development of practical work skills: Students have the opportunity to learn hands-on and practice using various tools and equipment used in electrical, electronic, and mechanical workshops. 4. Ability to perform preventive maintenance: Students learn how to maintain systems and devices and carry out preventive maintenance to ensure proper and sustainable performance. 5. Enhancement of teamwork and communication skills: Studying Electrical, Electronic, and Mechanical workshops promotes collaboration among students and the ability to work as a team in problem-solving and executing practical projects. 6. Knowledge and Understanding: a. Demonstrate a comprehensive understanding of the principles and concepts related to electrical and mechanical workshop operations. b. Identify and explain the safety measures and regulations applicable to electrical and mechanical workshops. 7. Describe the different tools, machines, and materials used in electrical and mechanical workshops. 

	8. Practical Skills: a. Apply safe working practices and use appropriate personal protective equipment (PPE) in electrical and mechanical workshop environments. b. Demonstrate proficiency in using various tools and equipment for turning, filing, drilling, welding, and assembly. 9. Perform practical tasks related to electrical and mechanical workshop operations accurately and efficiently. d. Apply problem-solving techniques to troubleshoot and rectify common issues encountered in electrical and mechanical workshop activities. 10. Critical Thinking and Analysis: a. Analyze and evaluate different turning processes, instrumentation measures, and cutting tools used in the workshop. b. Assess the quality of filing processes and choose appropriate rasps and tools for different filing tasks. 11. Evaluate the drilling processes and select suitable drilling tools based on specific requirements. d. Analyze welding processes, including oxy-acetylene and arc welding, and determine safety precautions and best practices. 12. Communication and Collaboration: a. Effectively communicate and collaborate with peers in group projects and workshop activities. b. Present findings, results, and recommendations related to electrical and mechanical workshop tasks in a clear and concise manner. 13. Professional and Ethical Responsibility: a. Demonstrate ethical behavior and responsibility in adhering to safety regulations, environmental considerations, and industry standards in electrical and mechanical workshop practices 14. Overall, studying this subject prepares students to enter the job market in various technical and engineering fields, such as industrial maintenance, electrical and electronic installations, automation and robotics, medical devices, and other modern technologies.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. <u>Part A – Electronic workshop</u> In this part, we will learn how to check the elements in the electrical circuits, what is the way each element works, how to check it, and find out what is damaged and replace it. [14 hrs.] We will also talk about conductors and semiconductors [10 hrs.] <u>Part B – Electrical workshop</u> 1. Principles of Industrial Safety in Electrical Workshops [4 hrs.] 2. Tools Used in Electrical Workshops [5 hrs.]. 3. Power Sources and Characteristics [5 hrs.] 4. Multimeter and Wire Size Measurement [5 hrs.] <u>Part C – Mechanical workshop</u> 22. Different Types of Welding Irons and Spot Welding [4 hrs.] 23. Electric Transformers [5 hrs.] 24. Electric Circuits and Transformer Operation [5 hrs.]. 25. Types of Electric Motors [5 hrs.]



Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through labs, 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	63	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	4.2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	62	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	4.13
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, 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 الاسبوعي للمختبر

Electronic, Electrical , Mechanical Workshops

	Material Covered
Week 1,2	❖ Use different measuring devices in the workshop ❖ 1- Principles of Industrial Safety in Electrical Workshops. 2- Different Types of Welding Irons (with different capacities) and Spot Welding
Week 3,4	❖ How to use irons, types of soldering used, and how to use absorbent soldering irons ❖ 1- Electric Circuits and Transformer Operation. 2- Electrical Installations and Types of Wiring (Surface and Concealed)
Week 5,6,7	❖ Electronic components (resistor , inductors , capacitors) ❖ 1- ONE LAMP CONTROLLED BY ONE SWITCH 2- Parallel Wiring of Two Lamps with a Switch and Socket
Week 8	❖ Midterm Exam
Week 9 ,10	Electronic components (resistor , inductors , capacitors) Drawing a Staircase Lamp (Two-Way Switch) Circuit
Week 11,12	❖ Electronic components (Battery , jumper, fuse, push button, switch, rotary switch) ❖ 1- Introduction to Workshop Safety 2- Turning Process and Instrumentation Measures
Week 13,14	❖ Electronic components (Diode , Transistor, Transformer) ❖ 1- Cutting Tools 2- Practical Exercise - Horizontal Turning
Week 15	❖ using bread board and Vero board, Building a Circuit on Breadboard, Building a Circuit on Vero board ❖ 1- Turning Different Shapes 2- Introduction to Filing Process (practical Exercise)
Week 16	Final Exam

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	1- Encyclopedia of Electronic Components Volume 1 (Charles Platt). 2- J. Smith and E. Johnson, "Electrical Engineering Workshop: Theory and Practice"	Yes / online
Recommended Texts		No
Websites		



Grading Scheme

مخطط الدرجات

Group	Grade	التقدير	Marks (%)	Definition
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