دليل المواد الدراسية

قسم تقنيات هندسة الطائرات المسيرة

العام الدراسي (2025 - 2026)

الجامعة التقنية الشمالية

Northern Technical University

الكلية التقنية الهندسية الموصل

Technical Engineering College of Mosul

بكالوريوس هندسة تقنيات الطائرات المسيرة – الدورة الاولى

First Cycle-Bachelor's degree Department of (UAVs) Engineering Techniques

Undergraduate Degree Program Catalogue 2025-2026

Modules Catalogue Form

University Name: Northern Technical University.....

Faculty/Institute: Technical Engineering College Mosul.....

Scientific Department: Unmanned Aerial Vehicle Engineering Techniques

Academic or Professional Program Name: Bachelor of Unmanned Aerial Vehicle Engineering Techniques

Final Certificate Name: Bachelor of Unmanned Aerial Vehicle Engineering Techniques

Academic System: Bologna Process.....

Description Preparation Date: 2/9/2025

File Completion Date: 2/9/2025

Signature:

Head of Department Name:

Prof. Dr. Amer F. Sheet

Date: 2/9/2025

Signature:

Scientific Associate Name:

Prof. Dr. Mohammed Sabah Jarjees

Date: 25/9/2025

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance

Department: Assist. Lect. Warqaa Hashim Mahmood

Date:

Signature:

A. J

Approval of the Dean

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• Overview

This catalogue describes the courses (modules) offered by the Bachelor of Technology (B.Tech.) / (**First Level**) in **Unmanned Arial Vehicles (UAVs) program**. The proposed program includes **(12)** modules with over **(57)** student workload hours and a total of **(60)** European Credit Transfer and Accumulation System (ECTS). The delivery of modules based on the Bologna Process.

- **Undergraduate Courses/ Modules 2025-2026**

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Theory of Drone**			**Module Delivery**	
Module Type	**Core**			**☒ Theory**	
Module Code	**UAV104**			**☒ Lecture**	
ECTS Credits	**6**			**[ ]Lab**	
SWL (hr/sem)	**150**			**☐ Tutorial**	
				☐ Practical	
				☐ Seminar	
Module Level	1	**Semester of Delivery**	2		
Administering Department	UAV	**College**	TEMO		
Module Leader	Firas Aziz Ali	**e-mail**	firasaziz@ntu.edu.iq		
Module Leader's Acad. Title	Assist Prof.	**Module Leader's Qualification**	M.Sc.		
Module Tutor	Firas Aziz Ali	**e-mail**	firasaziz@ntu.edu.iq		
Peer Reviewer Name	Name	**e-mail**	E-mail		
Scientific Committee Approval Date	1/9/2025	**Version Number**	1.0		

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	
Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية			
Module Objectives أهداف المادة الدراسية	1. To develop problem solving skills and understanding of flight theory through the application of techniques. 2. To understand lift and drag from a given UAV.		

	3. This course deals with the basic concept of UAV flight. 4. This is the basic subject for all UAV forces and moments. 5. To study UAV maneuvers analysis.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Important: Write at least 6 Learning Outcomes, better to be equal to the number of study weeks. 1.They can calculate and analyze flight performance parameters (takeoff, climb, speed, cruise, landing). 2.They can assess the effects of weather conditions (temperature, wind, altitude) on flight performance. 3.They can create safe and efficient flight scenarios using performance data in flight planning. 4.They can develop economical flight strategies that maximize fuel efficiency.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. <u>Part A – Flight Theory</u> • **The Four Forces**: Understanding the balance between lift, weight, thrust, and drag is fundamental to achieving level flight. • **Aerodynamics**: Learning how air interacts with an aircraft's surfaces, including principles like Bernoulli's Principle and the formation of lift over an airfoil. • **Aircraft Components**: Identifying and describing the function of key parts of an aircraft, such as the wings, fuselage, and control surfaces, and how they contribute to flight. <u>Part B - Analogue Electronics</u> Fundamentals Analyze characteristics of a particular flow. ● Formulate the governing equations and boundary conditions. ● Solve these equations analytically in simple cases. Revision problem classes and quiz [6 hrs] Total hrs = 105 = SSWL - (Exam hrs) = 109 - 4 = 105 hr (Time table hrs x 15 weeks)

Learning and Teaching Strategies

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

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	48	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	102	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**150**		

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

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
Week	**Material Covered**
Week 1	Atmospheric physics: Physical properties of air, International standard atmosphere

Week 2	Flight theory: Aerostatic and aerodynamic lift
Week 3	Aircraft aerodynamics: Airflow, Boundary layer
Week 4	Aerodynamic force and its components, Aerodynamic moment, L/D ratio
Week 5	Wing profile
Week 6	Takeoff Performance, Climb Performance, Cruise Performance
Week 7	Stall, Overloading devices
Week 8	Flight controls, Tail assembly
Week 9	Body, Landing gear
Week 10	Takeoff and landing speed
Week 11	Turning flight
Week 12	Lift coefficient and drag coefficient
Week 13	Wing types and positions
Week 14	Climb flight
Week 15	Rotary wings configurations
Week 16	**Preparatory week before the final Exam**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	1-Introduction to Theory of Flight (First Edition), Nihad Daidzic, 2024. 2-**Flight Theory and Aerodynamics: A Practical Guide for Operational Safety 3rd, Charles E. Dole , James E. Lewis, Joseph R. Badick, 2022.**	Yes
Recommended Texts	1-Introduction to Flight, by John Anderson Jr. 8th edition 2016	No
Websites	https://www.academia.edu/70312150/Introduction_to_Flight	

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

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

Module Information معلومات المادة الدراسية				
Module Title	**Physics**		**Module Delivery**	
Module Type	**Support or related learning activity**		**☒ Theory**	
Module Code	**UAV 107**		**☐ Lecture**	
ECTS Credits	**5**		**x Lab**	
SWL (hr/sem)	**125**		**☐ Tutorial**	
			☐ Practical	
			☒ Seminar	
Module Level	1	**Semester of Deliver**	2	
Administering Department	UAV	**College**	NTU	
Module Leader	Banan Najim Aldeen	**e-mail**	Banan.najim@ntu.edu.iq	
Module Leader's Acad. Title	Lecturer	**Module Leader's Qualification**	M.Sc.	
Module Tutor	Banan Najim Aldeen	**e-mail**	Banan.najim@ntu.edu.iq	
Peer Reviewer Name	Name	**e-mail**	E-mail	
Scientific Committee Approval Date	1-9-2025	**Version Number**	1.0	

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	The primary objective of a first-year Engineering Physics module is to help students develop a clear understanding of the fundamental principles of physics that form the basis of engineering applications. Students are introduced to core concepts in mechanics, waves, thermodynamics, and electricity and magnetism, including important laws such as Newton's Laws of Motion. This foundational knowledge enables them to understand how physical systems behave in real-world situations.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Students will be able to understand and apply fundamental principles of physics, including mechanics, waves, thermodynamics, and electricity, using laws such as Newton's Laws of Motion. 2. Students will be able to solve numerical and conceptual physics problems by applying appropriate mathematical techniques and logical reasoning. 3. Students will be able to analyze different types of motion and explain concepts such as force, work, energy, and power, including the application of conservation laws. 4. Students will be able to describe oscillations and wave motion, including simple harmonic motion, sound waves, and basic optical phenomena. 5. Students will be able to explain thermodynamic processes and apply the laws of thermodynamics to simple engineering systems.
Indicative Contents المحتويات الإرشادية	▯ Scalars and vectors, vector operations ▯ Motion in one, two, and three dimensions ▯ Newton's Laws of Motion and applications ▯ Work, energy, and power ▯ Conservation of momentum and energy ▯ Motion of rigid bodies and rotational dynamics

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The module will use a combination of **lectures, tutorials, and laboratory sessions** to ensure a strong conceptual understanding of physics principles. Lectures will introduce the theoretical foundations, focusing on clear explanations, derivations, and practical examples relevant to engineering applications. Tutorials will provide students with opportunities to solve numerical and conceptual problems, reinforcing lecture content and developing analytical and problem-solving skills.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	47	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3
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)	5and 10	Lo #1, # 2, and #10
	Assignments	2	10% (10)	2 and 12	Lo #3, # 4, and #6, #7
	Projects / Lab.	2	10% (10)	Continuous	All
	Report	1hr	10% (30)	13	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	1hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري والعملي	
Week	**Material Covered**
Week 1	**Introduction & Physical Quantities** – Units, dimensions, scalars, vectors
Week 2	**Kinematics in One Dimension** – Displacement, velocity, acceleration, motion graphs

Week 3	**Kinematics in Two and Three Dimensions** – Projectile motion, relative motion
Week 4	**Newton's Laws of Motion** – Force, mass, inertia, friction
Week 5	**Work, Energy, and Power** – Work-energy theorem, kinetic & potential energy
Week 6	**Conservation Laws** – Conservation of momentum and energy, collisions
Week 7	**Conservation Laws** – Conservation of momentum and energy, collisions
Week 8	**Rotational Motion** – Torque, angular momentum, moment of inertia
Week 9	**Wave Motion** – Types of waves, speed, wavelength, frequency, superposition
Week 10	**Wave Motion** – Types of waves, speed, wavelength, frequency, superposition
Week 11	**Sound Waves and Acoustics** – Speed of sound, Doppler effect
Week 12	**Thermodynamics** – Temperature, heat, thermal expansion, laws of thermodynamics
Week 13	**Thermodynamics** – Temperature, heat, thermal expansion, laws of thermodynamics
Week 14	**Entropy and Heat Transfer** – Conduction, convection, radiation
Week 15	**Electricity & Circuits** – Charge, current, voltage, Ohm's law, series and parallel circuits
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
Week	**Material Covered**
Week 1-2	Measurement of length, mass, time; use of vernier calipers and micrometer
Week 3-4	Measurement of length, mass, time; use of vernier calipers and micrometer
Week 5-6	Experiment on motion with a ticker timer / track & timer
Week 7-8	Collision experiments using dynamics trolleys / air track
Week 9-10	Moment of inertia of a circular disc / rod
Week 11-12	Resonance tube experiment, tuning fork measurements
Week 13-14	Specific heat capacity of solids / water
Week 14-15	Ohm's law verification, series & parallel circuits

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	**Engineering Physics – H.K. Malik & A.K. Singh** — A standard engineering physics text covering mechanics, waves, thermodynamics, optics, and modern physics with examples and problems.	yes

Recommended Texts	**University Physics** (e.g., by Young & Freedman or *OpenStax*'s *University Physics Volume 1*) — A classic introductory physics textbook used worldwide; *OpenStax* is free (OER) and covers mechanics, thermodynamics, and waves.	yes
Websites	http://hyperphysics.phy-astr.gsu.edu/	

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

Code	Course/Module Title	ECTS	Semester
UAV107	**Physics**	**5**	**2**
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
3	**2**	**(33/15) =2.2**	**(17/15) =1.1**

The college's first-year physics course aims to provide students with a strong foundation in the fundamental principles of physics, develop problem-solving and analytical skills, and enable the practical application of these principles in engineering and technology. The course seeks to integrate theoretical knowledge with experimental practice, helping students understand the physical world, interpret data, and prepare for advanced studies in their engineering disciplines.

Module Information معلومات المادة الدراسية					
Module Title	English language			**Module Delivery**	
Module Type	Support or related learning activity			☒**Theory** ☐**Lecture** ☐**Lab** ☐**Tutorial** ☐**Practical** ☒**Seminar**	
Module Code	NTU 101				
ECTS Credits	2				
SWL (hr/sem)	50				
Module Level		1	**Semester of Deliver**		1
Administering Department		UAV	**College**	TEMO	
Module Leader	Muhammed S. Dawood		**e-mail**	mohammed.sulayman@ntu.edu.iq	
Module Leader's Acad. Title		Lecturer	**Module Leader's Qualification**		M.Sc.
Module Tutor	Muhammed S. Dawood		**e-mail**	mohammed.sulayman@ntu.edu.iq	
Peer Reviewer Name		Name	**e-mail**	E-mail	
Scientific Committee Approval Date		1-9-2025	**Version Number**		1.0

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1. To develop problem solving skills mainly speaking, reading, writing and listening skills and to understand English language as a foreign language through the application of many techniques.

	2. To understand the general principles of English language. 3. This course deals with the basic concepts of learning the main rules of English Grammer and English vocabularies. 4. This is the basic subject for writing and speaking English well. 5. To understand how to build a correct English sentence.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Important: Write at least 6 Learning Outcomes, better to be equal to the number of study weeks. 1. To recognize how to use the main and auxiliary verbs in addition to the possessive pronouns. 2. To list the various words associated with wh_questions and many subjective pronouns. 3. To talk about social expressions and personal information mainly about jobs by using affirmative, negative and interrogative sentences. 4. To discuss how to use adjectives and their positions in the sentence. 5. To contract the simple present sentence withe using I/ we/ you and they and to define the articles. 6. To describe the present simple tense with using he/ she and to discussed verbs of frequency. 7. To identify the basic question words and demonstrative pronouns and their applications. 8. To discuss the use of there is/ are and many prepositions. 9. To discuss the structure of simple past sentence and various irregularverbs. 10. To explain the negative and interrogative structure of the simple pasttense sentence in addition to the adverbs of the past tense. 11. To identify the use of many adverbs and the use of can/ can't in the sentence and to explain requests and offers. 12. To elaborate the use of like and would you like and the use of some and any in many expressions. 13. To discuss the use of the present continuous and the difference between simple present and present continuous sentences. 14. To explain the structures that are used to refer to future plants
Indicative Contents المحتويات الإرشادية	1. An introduction to the importance of learning English language and the role it plays in social communication. 2. Application of various tenses like present and past tenses. 3. Demonstrating many main concepts including (offers, requests, future, plants, personal expressions and tenses). 4. Using many skills to learn English like listening, reading, writing and speaking skills, moreover; presenting different examples to elaborate any concept or structure.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted in this module is associated with the communicative approach which will be applied to develop students' skills to learn English and to enable students to use English in communication, therefore, using authentic materials in the class is so necessary. This approach is important to encourage students' participation in the class and to highlight their motivation in learning English, while at the same time refining and expanding their interactions and skills to achieve at least more success

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	(33/15) =2.2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	17	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	(17/15) =1.1
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)	5and 10	Lo #1, # 2, and #10
	Assignments	2	10% (10)	2 and 12	Lo #3, # 4, and #6, #7
	Projects / Lab.		10% (10)	Continuous	All
	Report	1hr	10% (30)	13	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	1hr	10% (10)	7	LO #1 - #7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري والعملي	
	Material Covered
Week 1	Unit one: Hello Am/are/is. my/your This is with practice in work
Week 2	Unit two: Your world He/she/they, his/her Questions
Week 3	Unit three: All about you Personal information/ social expressions
Week 4	Unit four: Family and friends' Possessive adjectives/ possessive 's Have/has, adjective + noun
Week 5	Unit five: The way l live Present simple l/we/you/they An/a , adjective + noun
Week 6	Unit six: Every day Present simple he/she Negatives and questios, adverbs of frequency
Week 7	Mide exam
Week 8	Unit seven: My favorities Question words, pronouns, this/that
Week 9	Unit eight: Where l live There is/ are, prepositions
Week 10	Unit nine: Times past Was/ were born, past simple and irregular verbs
Week 11	Discussing reports
Week 12	Discussing reports
Week 13	Revision
Week 14	Revision
Week 15	Unit ten: We had a great time Past simple, regular and irregular Questions, negatives, ago
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	No

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	John and liz Soar. (New headway beginner) 4th edition. Oxford: Oxford University Press	yes
Recommended Texts		
Websites		

Grading Scheme

مخطط الدرجات

Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (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

Code	Course/Module Title	ECTS	Semester
NTU 1 01	**English language**	**2**	**1**
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
50	**0**	**(33/15) =2.2**	**(17/15) =1.1**
The College's first-year English course aims to enable students to acquire the four basic skills of the English language: listening, speaking, reading, and writing, with an emphasis on academic terminology and the ability to use the language in a university and professional context. The course also includes training in basic grammar, correct pronunciation, and sentence and paragraph construction.			

Module Information معلومات المادة الدراسية					
Module Title	Engineering drawing			**Module Delivery**	
Module Type	Basic			**Theory** ☐ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	UAV102				
ECTS Credits	6				
SWL (hr/sem)	150				
Module Level	1		**Semester of Deliver**	1	
Administering Department	UAV		**College**	TEMO	
Module Leader	Hasan abdulellah abdulla		**e-mail**	hasan.alsarraf@ntu.edu.iq	
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**	M.Sc.	
Module Tutor	Hasan abdulellah abdulla		**e-mail**	hasan.alsarraf@ntu.edu.iq	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	01/9/2025		**Version Number**	1.0	

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1. Introduction students to the Autocad software. 2. Introduction to the students of engineering drawings. 3. Teaching students to draw geometrically according to accurate measurements. 4. To understand the basic principle for descriptive geometry.

	5. to train students: to read the engineering drawings through the application of computers and techniques. 6. To understand standard specifications, draw simple and complex assembly drawings.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Enables the students to use AutoCAD for 2-D representations. 2. Enables the students to Introduce the students to engineering drawings. 3. Enables the students to learn the techniques and standard practices of technical graphics. 4. To develop the student's abilities of engineering imagination. 5. To develop the student's engineering sense by dealing with dimensions and measurements. 6. To teach the student to identify the characteristics of geometric shapes and the various ways to draw them. 7. To teach the student diversity in the way of thinking and finding solutions for drawing each form.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. <u>Part A -</u> Introduction to (CAD), components of computer aided drawing (CAD), Exercises. [8 hrs.] Introducing the most important geometric shapes and their components, and how to draw each shape using the program [4hrs.] Introducing the most important commands that contribute to making modifications to the geometric shapes drawn using the program [8 hrs.] Demonstrate the method of drawing advanced geometric shapes using the program. [4 hrs.] Training students to draw advanced geometric shapes using the program [8 hrs.] Revision and quiz [8hrs] <u>Part B -</u> Training students at this stage to draw triangular projections of geometric shapes for any geometric shape in general. [8 hrs.] Complex geometrical shape. [12 hrs.] Training the students at this stage to draw the triangular projections of the geometric shapes of the mechanical engineering shapes in particular. [15 hrs.] Training the students at this stage to draw the Perspective. [15 hrs.] Revision and quiz [8hrs]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The major approach used to offer this module will be to promote student engagement in the exercises while also enhancing and broadening their critical thinking abilities. This will be accomplished through lectures, interactive tutorials, and the consideration of various sorts of easy experiments incorporating some engaging sampling exercises for the students.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
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	**87**	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	5.8
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**150**		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	3	10% (10)	2 , 7 and 13	LO #1, #5 and #6
	Assignments	5	10% (10)	3 , 5, 8,10 and 14	LO #2,#3, #4 and #7
	Projects / Lab.	10	20% (20)	Continuous	All
	Report				
	Midterm Exam	2hr	10% (10)	7	LO #1 - #4

Summative assessment	**Final Exam**	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Demonstrates knowledge about: · Introduction to engineering drawing. · Introduction about AutoCAD 2D software in engineering drawing. · Limits, grid, object snap, view menu (zoom, pan).
Week 2&3	Correctly draw menu (line, poly line, polygon, rectangle, arc, circle, point, text).
Week 4&5	Correctly modify menu (erase, copy, mirror, offset, move, rotate, trim, extend, explode).
Week 6&7&8	Complex geometrical shape.
Week 9	Mid Semester exam
Week 10&11&12	Perspective
Week 13	Correctly implement and identify orthographic projection. Correctly implement and execute first and third angle projection method
Week 14	Correctly draw the projection with the first angle projection method Correctly draw the projection with the third angle projection method Demonstrates knowledge and implementation about drawing the three projections with the first and third angle projection method
Week 15	Semester exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	No

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Fundamentals and principles of engineering drawing Fundamentals of AutoCAD 2010	Yes
Recommended Texts	Fundamentals of AutoCAD2020	Yes
Websites	https://tr.pinterest.com/pin/343540277818420973/	

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.

Semester	ECTS	Course/Module Title	Code
1	6	ENGINEERING DRAWING	UAV102
USWL (hr/sem)	**SSWL (hr/sem)**	**Lect/Lab./Prac./Tutor**	**Class (hr/w)**
87	63	4	0

DESCRIPTION

Engineering drawing is a universal language used exclusively by engineers, technicians, and all those working in engineering fields to convey and translate scientific and technical ideas. It is also used in communication between design professionals and product developers, regardless of the language they speak. Due to the urgent need for a means of assisting those interested in computer-aided engineering drawing, AutoCAD was chosen. It is considered one of the most advanced programs for the drafting process and one of the most popular CAD systems in the world due to its ease of use and speed of implementation.

Module Information معلومات المادة الدراسية					
Module Title	**Mechanical Engineering /Static**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**UAV101**				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level	1		**Semester of Delivery**	1	
Administering Department	**UAV**		**College**	TEMO	
Module Leader	Banan Najem Aldeen		**e-mail**	Banan.najim@ntu.edu.iq	
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**	MASTER	
Module Tutor	Banan Najem Aldeen		**e-mail**	Banan.najim@ntu.edu.iq	
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date	1/9/2025		**Version Number**	1.0	

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	Module Objectives for Engineering Mechanics/Statics: 1. Understand the fundamental concepts and principles of Statics, including motion, forces, and acceleration. 2. Apply kinematic equations to analyze the motion of particles and rigid bodies in various scenarios. 3. Determine the relationship between forces, mass, and acceleration using Newton's laws of motion.

	4. Apply the principles of work and energy to analyze and solve dynamic problems. 5. Analyze and calculate linear and angular momentum, and apply the principle of impulse and momentum to dynamic systems. 6. Understand and apply the principles of vibrations and oscillations in mechanical systems. 7. Apply principles of balancing rotating masses and vibrations to ensure smooth operation of machinery. 8. Analyze multi-degree of freedom systems and determine their natural frequencies and mode shapes. 9. Apply dynamic principles to real-world engineering problems and systems. 10. Develop critical thinking and problem-solving skills in the context of engineering Statics. 11. Communicate effectively, both orally and in writing, to present and explain the analysis, results, and solutions of dynamic problems. By achieving these module objectives, students will gain a comprehensive understanding of the principles and applications of engineering Statics. They will be able to analyze and solve problems related to motion, forces, and vibrations in mechanical systems, and apply their knowledge to real-world engineering scenarios. They will also develop skills in critical thinking, problem-solving, and effective communication, which are valuable in the field of engineering.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Apply fundamental concepts of engineering mechanics/statics to analyze and solve problems related to the equilibrium of rigid bodies. 2. Demonstrate a deep understanding of vector mathematics and its application in statics, including vector addition, subtraction, dot product, and cross product. 3. Apply the principles of static equilibrium to solve problems involving forces and moments acting on rigid bodies in two and three dimensions. 4. Analyze and calculate the internal forces, such as axial forces, shear forces, and bending moments, in statically determinate structures using methods such as the method of sections and the method of joints. 5. Utilize free-body diagrams to model and analyze the forces acting on a structure or a rigid body, and determine the resultant forces and moments at specific points. 6. Analyze and calculate the centroid and moment of inertia of various two-dimensional shapes, including rectangles, triangles, and circles, and apply these concepts to determine the stability and strength of structures. 7. Apply the concepts of friction and its effects on the equilibrium of bodies in statics, including calculating static and kinetic friction forces and determining the angle of friction. 8. Analyze and calculate the forces in trusses and frames, including the method of joints and the method of sections, and determine the stability and structural integrity of these systems. 9. Apply the principles of equilibrium to solve real-world engineering problems, such as determining the stability of structures, calculating the forces on supports and connections, and analyzing the behavior of mechanical systems. 10. Communicate effectively, both orally and in writing, to present and explain the analysis, results, and solutions of engineering mechanics/statics problems. By achieving these module learning outcomes, students will develop a strong foundation in engineering mechanics/statics and be equipped with the necessary knowledge and skills to analyze and solve a wide range of engineering

	problems involving static equilibrium and structural stability.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. 1. Introduction to Statics • Definition and scope of statics • Fundamental concepts and principles • Importance of statics in engineering 2. Vectors and Vector Analysis • Vector representation and operations • Vector components and coordinate systems • Vector addition, subtraction, and scalar multiplication 3. Forces and Moments • Forces and their characteristics • Resultant and equilibrium of forces • Moment of a force and its properties • Couples and their effects 4. Equilibrium of Rigid Bodies • Free body diagrams and force analysis • Equations of equilibrium in two and three dimensions • Solving equilibrium problems using scalar and vector approaches • Applications to simple systems and structures 5. Truss Structures • Introduction to truss analysis • Method of joints and method of sections • Determination of member forces and support reactions 6. Friction • Laws of friction and frictional forces • Types of friction and their characteristics • Calculation of frictional forces and moments • Applications to inclined planes, wedges, and screws 7. Center of Gravity and Centroids • Definitions and properties of center of gravity and centroids • Determination of center of gravity and centroids of simple shapes • Composite bodies and distributed loads 8. Moments of Inertia • Moment of inertia and its physical significance • Calculating moments of inertia for simple shapes • Parallel-axis and perpendicular-axis theorems • Application of moments of inertia in engineering analysis

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

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	57	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	93	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6
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**	4	15% (15)	5,7,9 and 13	LO #2 , #3 , #5 and #8
	Assignments	5	15% (15)	2,6,8,10 and 14	LO #1 ,#4 ,#6 ,#7 and #9
	Projects / Lab.				
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	LO #1 - #5
	Final Exam	3hr	50% (50)	16	All

Total assessment	100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction, Fundamental Concepts, Units Conversion, Scalar and Vector Quantities.
Week 2-4	Resultant force Resolution & Composition of Forces. Triangle & parallelogram law
Week 5	Addition of a System of Coplanar Forces: Scalar Notation, Cartesian Vector Notation
Week 6-7	Equilibrium of a Particle
Week 8	Moment of a Force, Varignon Theorem.
Week 9	Moment of a Couple
Week 10-11	Equilibrium of a Rigid Body
Week 12	Distributed loads.
Week 13	Friction
Week 14	Centroid
Week 15	Centroid of area, First moment of area.
Week 16	Area moment of inertia, Second moment of area.

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Engineering Mechanics/ Statics, Fourteen Edition, R.C. Hibbeler	yes
Recommended Texts	1- Engineering Mechanics , Ferdinand L. Singer 2- Engineering Mechanics, Meriam 3- Engineering Mechanics/ Statics, Arthur P. Boresi & Richard J. Schmidt	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.

Code	Course/Module Title	ECTS	Semester
UAV 101	**Mechanical Engineering /Static**	**6**	**1**
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
4	**5**	**57**	**93**
Description			

Statics, is a fundamental branch of Engineering Mechanics that deals with the analysis and prediction of the behavior of objects at rest or in equilibrium. It provides the foundation for understanding the principles of forces, moments, and their effects on structures and systems. This branch of engineering mechanics is primarily concerned with the study of particles and rigid bodies under the action of forces and moments.

One of the main objectives of Engineering Mechanics/Statics is to enable engineers to calculate and predict the behavior of structures and systems under different loading conditions. This includes understanding the concepts of force vectors, moments, and couples, as well as the methods for resolving and combining these forces to determine their resultant effects.

Through theoretical study, problem-solving, and practical applications, students of Engineering Mechanics/Statics develop critical skills in analyzing and solving engineering problems. They learn to apply mathematical principles, physics, and engineering concepts to determine the forces and moments in structures and systems, and to ensure their stability and safety.

Module Information					
Module Title	**Mathematics Principles**			**Module Delivery**	
Module Type	**Basic**			☒ **Theory** ☒ **Lecture** ☐ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**UAV103**				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level		1	**Semester of Delivery**		1
Administering Department		UAV	**College**	**Engineering Technical College/Mosul**	
Module Leader	Omar Talal Mahmood		**e-mail**	Omar.talal@ntu.edu.iq	
Module Leader's Acad. Title		Assistant Lecturer	**Module Leader's Qualification**		M. Sc.
Module Tutor	Omar Talal Mahmood		**e-mail**	Omar.talal@ntu.edu.iq	
Peer Reviewer Name		Name	**e-mail**	E-mail	
Scientific Committee Approval Date		1/9/2025	**Version Number**		1.0

Relation with other Modules			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents	
Module Objectives	To let students be able to identify the advanced basic fundamentals in mathematics (differentiation and integration and their different applications) to develop their mentally capability by exercising solutions. Also, can be able to correlate the information data in order to solve the scientific problem and how to make use of it in other scientific subjects.

Module Learning Outcomes	1. Students are able to relate the significance of comprehending algebra's structure to a higher-level subject. 2. Within the parameters of the theory of modules, students have the ability to generate consciousness, particularly symbolic thinking. 3. Students are capable of using their understanding and analyzing models of mathematics, science, and technology, as well as other fields that are relevant to those disciplines. 4. Students are able to convey the outcomes of the growth of oral and writing comprehension as well as construct a framework for knowledge that supports mathematics, science, and technology.
Indicative Contents	Subject-specific Knowledge: • knowledge of key ideas related to mathematics in the university • knowledge of the National Curriculum for mathematics and the way in which it facilitates the development of mathematical understanding • an understanding of the way in which theory informs practice and vice versa Subject-specific Skills: • an informed and critical awareness of research in mathematics education which can enhance the effectiveness of the university mathematics teacher • observe, record accurately and relate educational practice to theory in university and classrooms • critically analyzes literature on a variety of contemporary education issues relating to advanced mathematics Key Skills: • communicate ideas, principles and theories effectively in written form • manage time and work to deadlines • construct and sustain a reasoned argument • evaluate and make use of information from a variety of advance sources

Learning and Teaching Strategies	
Strategies	To accommodate varied talents, skills, learning rates, and learning styles, teaching and learning strategies might involve a variety of whole class, group, and individual activities. This enables every student to engage and to some extent succeed.

Student Workload (SWL)			
Structured SWL (h/sem)	93	**Structured SWL (h/w)**	6.2
Unstructured SWL (h/sem)	57	**Unstructured SWL (h/w)**	3.8
Total SWL (h/sem)	**150**		

Module Evaluation					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	5	20% (20)	3 , 5 , 7 , 10 and 13	LO #1, #3
	Assignments	6	20% (20)	2 , 4 , 6 , 8 , 12 and 14	LO #2, #4
	Projects / Lab.				
	Report				
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	LO #1 - #2
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)	
	Material Covered
Week 1	To let students be able to identify the advanced basic fundamentals in mathematics (differentiation and integration and their different applications) to develop their mentally capability by exercising solutions. Also, can be able to correlate the information data in order to solve the scientific problem and how to make use of it in other scientific subjects.
Week 2	Trigonometric functions, trigonometric relations, graphic drawing, applications
Week 3	Limits of algebraic and trigonometric functions, limit near, applications
Week 4	Theory of derivatives, derivative of algebraic and trigonometric and empirical functions

Week 5	Chain rules, applications
Week 6	Inverse functions and inverse of trigonometric functions, applications
Week7	Derivatives of logarithmic and exponential functions, hyperbolic and its derivatives, relation and drawing, applications
Week 8	Integration theory, indefinite and definite integration, trigonometric and its inverse
Week 9	Integration of logarithmic and exponential functions, integration of hyperbolic functions, other integrations
Week 10	Methods of integrations, integration by parts
Week 11	Integration by partial fractions
Week 12	Area under a curve, area between two curves
Week 13	Volumes by revolutions, length of a curve
Week 14	Simple differential equations
Week 15	Approximate area by trapezoidal and Simpson rule, numerical integration, applications
Week 16	**Preparatory week before the final Exam**

Learning and Teaching Resources		
	Text	**Available in the Library?**
Required Texts	" Calculus " , Ford , S.R. and Ford , J.R. , (1963) McGraw-Hill	Yes
Recommended Texts	“Principles of Mathematics”, Katherine A. Loop., (2015)	No
Websites	https://web.math.ucsb.edu/~agboola/teaching/2021/winter/122A/rudin.pdf	

Grading Scheme			
Group	**Grade**	**Marks %**	**Definition**
Success Group (50 - 100)	**A -** Excellent	90 - 100	Outstanding Performance
	B - Very Good	80 - 89	Above average with some errors
	C - Good	70 - 79	Sound work with notable errors
	D - Satisfactory	60 - 69	Fair but with major shortcomings

	E - Sufficient	50 - 59	Work meets minimum criteria
Fail Group	**FX –** Fail	(45-49)	More work required but credit awarded
(0 – 49)	**F –** Fail	(0-44)	Considerable amount of work required

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

Module 1

Code	**Course/Module Title**	**ECTS**	**Semester**
TEMO 100	Mathematics Principles	6	One
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
4	2	93	57

Description

Mathematics offers a potent and common language. When presenting mathematical ideas, arguments, and conclusions both orally and in writing, students are expected to employ acceptable mathematical terminology and a variety of representational techniques.

Students should be able to:

1. employ proper mathematical language (notation, symbols, and terminology) in both spoken and written explanations in order to achieve the goals of mathematics.

2. Present information using the proper mathematical representations.

3. choose between various mathematical representational styles.

4. Express thorough, clear, and simple mathematical arguments.

5. utilizes a logical structure to arrange information.

Module Information
معلومات المادة الدراسية

Module Title	**Human rights and Democracy**	**Module Delivery**	
Module Type	SUPLEMENT	✓ **Theory** ✓ **Lecture** **Lab** **Tutorial** **Practical** ✓ **Seminar**	
Module Code	**NTU100**		
ECTS Credits	2		
SWL (hr/sem)	50		
Module Level	1	**Semester of Delivery**	1
Administering Department	**UAV**	**College**	**ENGINEERING TECHNICAL COLLEGE/MOSUL**
Module Leader	Ahmed Moayad	**e-mail**	**AHMED.MOAYED@NTU.EDU.IQ**
Module Leader's Acad. Title	Assist Prof.	**Module Leader's Qualification**	PHD
Module Tutor	Ahmed Moayad	**e-mail**	
Peer Reviewer Name	None	**e-mail**	None
Review Committee Approval	1/09/2025	**Version Number**	1.0

Relation With Other Modules
العلاقة مع المواد الدراسية الأخرى

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

Module Aims, Learning Outcomes and Indicative Contents
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Objectives أهداف المادة الدراسية	تهدف الديمقراطية وحقوق الانسان للحفاظ على كرامة الفرد وحقوقه الأساسية وتعزيزها كما تحقيق العدالة الاجتماعية وتشجيع التنمية الاقتصادية والاجتماعية للمجتمع وتماسكه فضلا عن توطيد الأمان الوطني وإرساء مناخ مؤات للسلام الدولي وذلك لان حقوق الانسان والديمقراطية مرجعاً أساسياً للجميع لحماية حقوق الإنسان؛ وهي توفر بيئة لحماية حقوق الإنسان وإعمالها إعمالاً فعلياً. واليوم، بعد مضي فترة على تحقيق الديمقراطية في مختلف أنحاء العالم، يبدو أن العديد من النظم الديمقراطية تتراجع. ويظهر أن بعض الحكومات تتعمد إضعاف إجراء عمليات تحقق مستقلة بشأن سلطاتها، والقضاء على أي نقد، وتفكيك الرقابة الديمقراطية وضمان حكمها لمدة طويلة، مع أثر سلبي على حقوق الشعب.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1 - فهم ومعرفة وأدراك حقوقه التي اقرها الله له وللبشر جميعاً وبالتالي فهي هبه وليس مكسب من أحد ولا يحق لأي شخص انتزاعها. 2- يعبر الطالب بأسلوبه الخاص عن هذه الحقوق ويدافع عنها. 3- تعليل الظواهر واعطاء التفسيرات لما يحدث امامه من انتهاك لحقوق الانسان وحرياته من خلال تحديد اوجه النقص او الثغرات الموجودة في ضوء المعلومات المتوفرة لديه 4- فهم اهم النظم السياسية والتي تعد ضمانه لحقوق الانسان وحرياته السياسية ومحاولة تطبيقه على ارض الواقع الا وهو النظام الديمقراطي.
Indicative Contents المحتويات الإرشادية	❖ حقوق الانسان في التاريخ المعاصر والحديث: الاعتراف الدولي بحقوق الانسان منذ الحرب العالمية الأولى وعصبة الامم المتحدة (4 ساعات) ❖ حقوق الانسان، تعريفها، اهدافها وحقوق الانسان في الحضارات القديمة وخصوصا حضارة وادي الرافدين (6 ساعات) ضمانات واحترام وحماية حقوق الانسان على الصعيد الدولي: – دور الأمم المتحدة ووكالاتها المتخصصة في توفير الضمانات – دور المنظمات الاقليمية (الجامعة العربية، الاتحاد الأوربي، الاتحاد الافريقي، منظمة الدول الأمريكية، منظمة آسيان) ❖ دور المنظمات الدولية الاقليمية غير الحكومية والرأي العام في احترام وحماية حقوق الانسان (12 ساعة)

❖	المشاكل والمعوقات ونقاشات الطلبة (6 ساعات)

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	-استراتيجية التفكير حسب قدرة الطالب 2-استراتيجية مهارة التفكير العالية 3-استراتيجية التفكير الناقد في التعلم 4-العصف الذهني

Student Workload (SWL)
الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2.2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	17	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	1.1
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**	4	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	0	0	Continuous	All
	Projects / Lab.	0	0		
	Report	4	10% (10)		
Summative assessment	**Midterm Exam**	2 hr	20% (20)	7	LO # 1-7
	Final Exam	3 hr	60% (60)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	حقوق الانسان، تعريفها، اهدافها حقوق الانسان في الحضارات القديمة وخصوصا حضارة وادي الرافدين
Week 2	حقوق الانسان في الشرائع السماوية مع التركيز على حقوق الانسان في الإسلام
Week 3	حقوق الانسان في التاريخ المعاصر والحديث : الاعتراف الدولي بحقوق الانسان منذ الحرب العالمية الأولى وعصبة الامم المتحدة
Week 4	الاعتراف الاقليمي بحقوق الانسان : الاتفاقية الاوربية لحقوق الانسان 1950 ، الاتفاقية الامريكية لحقوق الانسان 1969 ، الميثاق الافريقي لحقوق الانسان 1981 ، الميثاق العربي لحقوق الانسان 1994
Week 5	حقوق الانسان في التاريخ المعاصر والحديث : الاعتراف الدولي بحقوق الانسان منذ الحرب العالمية الأولى وعصبة الامم المتحدة
Week 6	حقوق الانسان في الدساتير العراقية بين النظرية والواقع
Week 7	حقوق الانسان الاقتصادية والاجتماعية والثقافية و حقوق الانسان المدنية والسياسية
Week 8	حقوق الانسان الحديثة : الحقائق في التنمية ، الحق في البيئة النظيفة ، الحق في التضامن ، الحق في الدين
Week 9	ضمانات احترام وحماية حقوق الانسان على الصعيد الوطني ، الضمانات في الدستور والقوانين الضمانات في الرقابة الدستورية ، الضمانات في حرية الصحافة والرأي العام ، دور المنظمات غير الحكومية في احترام وحماية حقوق الانسان
Week 10	ضمانات واحترام وحماية حقوق الانسان على الصعيد الدولي : - دور الأمم المتحدة ووكالاتها المتخصصة في توفير الضمانات - دور المنظمات الاقليمية (الجامعة العربية ، الاتحاد الأوربي ، الاتحاد الافريقي ، منظمة الدول الأمريكية ، منظمة

	آسيان) دور المنظمات الدولية الاقليمية غير الحكومية والرأي العام في احترام وحماية حقوق الانسان
Week 11	مصطلح الديمقراطية ، نشأته، دلالته، تاريخ الديمقراطية.
Week 12	الاسلام والديمقراطية ومساوئ الحكم الاستبدادي .
Week 13	الانتقادات الموجهة للديمقراطية، ومحاسن النظام الديمقراطي.
Week 14	الأنظمة الديمقراطية في العالم/الديمقراطية في العالم الثالث/ المشاكل التي تواجه البلدان العربية في التحول الديمقراطي
Week 15	**الامتحان النهائي**

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	حقوق الانسان والديمقراطية – المفاهيم والمرتكزات للدكتور سماح مهدي العلياوي والدكتور سلمان كاظم البهادلي	Yes
Recommended Texts	الديمقراطية وحقوق الانسان في الاسلام للدكتور راشد الغنوشي	No
Websites	https://www.neelwafurat.com https://studies.aljazeera.ne	

APPENDIX:

GRADING SCHEME
مخطط الدرجات

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

Note:

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

Module Information
معلومات المادة الدراسية

Module Title	**AC Electrical Circuits**	**Module Delivery**	
Module Type	**Core**	☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**UAV106**		
ECTS Credits	**8**		
SWL (hr/sem)	**200**		

Module Level	1	**Semester of Delivery**	2
Administering Department	UAV	**College**	Technical Engineering College
Module Leader	Dr. Amer F. Sheet	**e-mail**	dr.amerfarhan@ntu.edu.iq
Module Leader's Acad. Title	Asst. Professor	**Module Leader's Qualification**	Ph.D.
Module Tutor	Dr. Amer F. Sheet	**e-mail**	dr.amerfarhan@ntu.edu.iq
Peer Reviewer Name	Name	**e-mail**	E-mail
Scientific Committee Approval Date	22/03/2026	**Version Number**	1.0

Relation with other Modules
العلاقة مع المواد الدراسية الأخرى

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

Module Aims, Learning Outcomes and Indicative Contents
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Objectives أهداف المادة الدراسية	

	1. To 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 mesh and Nodal analysis.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Important: Write at least 6 Learning Outcomes, better to be equal to the number of study weeks. 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 sinusoid and phasors in an electric circuit. 9. Discuss the various properties of resistors, capacitors, and inductors. 10. Explain the two Kirchoff's laws used in circuit analysis. 11. Identify the capacitor and inductor phasor relationship with respect to voltage and current.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. <u>Part A - Circuit Theory</u> 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, Introduction to mesh and nodal analysis. [SSWL=15 hrs] AC circuits I – Time dependent signals, average and RMS values. Capacitance and inductance, energy storage elements, simple AC steady-state sinusoidal analysis. [15 hrs] AC Circuits II - Phasor diagrams, definition of complex impedance, AC circuit analysis with complex numbers. [SSWL=10 hrs] RL, RC and RLC circuits - Frequency response of RLC circuits, simple filter and band-pass circuits, resonance and Q-factor, use of Bode plots, use of differential equations and their solutions. Time response (natural and step responses). Introduction to second order circuits. [SSWL=15 hrs] Revision problem classes [SSWL=6 hrs]

	Part B - Analogue Electronics Fundamentals Resistive networks, voltage and current sources, Thevenin and Norton equivalent circuits, current and voltage division, input resistance, output resistance, coupling and decoupling capacitors, maximum power transfer, RMS and power dissipation, current limiting and over voltage protection. [SSWL=15 hrs] Components and active devices – Components vs elements and circuit modeling, real and ideal elements. Introduction to sensors and actuators, self-generating vs modulating type sensors, simple circuit interfacing. [SSWL=14 hrs] Diodes and Diode circuits – Diode characteristics and equations, ideal vs real. Signal conditioning, clamping and clipping, rectification and peak detection, photodiodes, LEDs, Zener diodes, voltage stabilization, voltage reference, power supplies. [SSWL=15 hrs] Total hrs = 105 = SSWL - (Exam hrs) = 109 - 4 = 105 hr (Time table hrs x 15 weeks)

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

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

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	109	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	7
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	91	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6

Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**200**

Module Evaluation

تقييم المادة الدراسية

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

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction - Difference between Circuit Theory and Field Theory
Week 2	Basics of Network Elements
Week 3	Resistance and Resistivity, Ohm's Law and Inductance, Capacitance
Week 4	Review of Kirchhoff's Laws, Circuit Analysis - Nodal and Mesh
Week 5	Linearity and Superposition, Source Transformations, Thévenin and Norton Equivalents
Week 6	Review of Inductor and Capacitor as Circuit Elements, Source-free RL and RC Circuits, Transient Response
Week 7	Mid-term Exam + Unit-Step Forcing, Forced Response, the RLC Circuit

Week 8	Sinusoidal Forcing, Complex Forcing, Phasors, and Complex Impedance, Sinusoidal Steady State Response
Week 9	Nodal and Mesh Revisited, Average Power, RMS, Introduction to Polyphase Circuits
Week 10	Mutual Inductance, Linear and Ideal Transformers, Circuits with Mutual Inductance
Week 11	Frequency Response of Series/Parallel Resonances, High-Q Circuits
Week 12	Complex Frequency, s-Plane, Poles and Zeros, Response Function, Bode Plots
Week 13	Two Port Networks, Admittance, Impedance, Hybrid, and Transmittance Parameters
Week 14	Two Port Networks, Admittance, Impedance, Hybrid, and Transmittance Parameters
Week 15	Two Port Networks, Admittance, Impedance, Hybrid, and Transmittance Parameters
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: Introduction to Agilent VEE and PSPICE
Week 2	Lab 2: Thévenin's / Norton's Theorem and Kirchhoff's Laws
Week 3	Lab 3: First-Order Transient Responses
Week 4	Lab 4: Second-Order Transient Responses
Week 5	Lab 5: Frequency Response of RC Circuits
Week 6	Lab 6: Frequency Response of RLC Circuits
Week 7	Lab 7: Filters

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	No

	Copyright Year: 2020, dissidents.	
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.

Module Information معلومات المادة الدراسية					
Module Title	**Arabic Language**			**Module Delivery**	
Module Type	Support			✓**Theory** ✓**Lecture** ✓**Seminar**	
Module Code	NTU102				
ECTS Credits	2				
SWL (hr/sem)	50				
Module Level		1	**Semester of Delivery**		2
Administering Department		UAV	**College**	TEMO	
Module Leader	Shaymaa Salim Hameed		**e-mail**	Shamaaalobaidy@ntu.edu.iq	
Module Leader's Acad. Title		lecture	**Module Leader's Qualification**		Ph.D.
Module Tutor	Shaymaa Salim Hameed		**e-mail**	Shamaaalobaidy@ntu.edu.iq	
Peer Reviewer Name		Name	**e-mail**	E-mail	
Scientific Committee Approval Date		08/03/2026	**Version Number**		1.0

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

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Objectives أهداف المادة الدراسية	1. تعلم قواعد الكتابة والإملاء بدقة · اللغة العربية. 2. اكتساب مهارات التمي ·يب ·ي الحروف المشددة والمقصورة واستخدامها بشكل صحيح. 3.فهم واستخدام صحيح للحروف الضاد والظاء والهمزة والحروف الشمسية والقمرية. 4.تطوير مهارات الكتابة والتواصل اللغوي واستخدام العلامات ال ريقيم بفعالية. 5. تعلم مفاهيم الجمل والمفاعيل والعدد وقواعد حروف الجر وكتابة الخطابات الإدارية بمهنية
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	بناءً على المواضيع المذكورة، يمكن تلخيص ما يتعلمه الطالب ·يف نهاية الكورس على النحو التا يل: • مهارات الكتابة: يكتسب الطالب مهارات أساسية للكتابة العربية، بما ·يف ذلك قواعد الكتابة، والتفرقة ب ·ي الأحرف المشددة والمقصورة، واستخدام العلامات ال ريقيم بشكل صحيح. • النطق والإملاء: يتعلم الطالب كيفية نطق واستخدام الحروف الصوتية العربية مثل الضاد والظاء بدقة، وكذلك كتابة الهمزة ·يف الكلمات. • القواعد اللغوية: يستفيد الطالب من معرفة القواعد اللغوية الأساسية مثل الأجزاء الأساسية للجملة والمفاعيل والعدد. • التفرقة ب ·ي الشمسية والقمرية: يتعرف الطالب على الحروف الشمسية والقمرية ويتعلم استخدامهم بشكل صحيح. • مهارات الكتابة الإدارية: يكتسب الطالب مهارات كتابة الخطابات الإدارية بشكل مح ريف ويصبح قادرًا على التفاعل بفعالية ·يف بيئة عمل إدارية.
Indicative Contents المحتويات الإرشادية	1. قواعد كتابة الالف الممدودة والمقصورة – الحروف الشمسية والقمرية 2. الضاد والظاء 3. كتابة الهمزة 4. علامات ال ريقيم 5. الاسم والفعل والتفريق بينهما 6. المفاعيل 7. العـــدد 8. تطبيقات الأخطاء اللغوية الشائعة 9. النون والتنوين ـ معا ·ين حروف الجر
	10.الجوانب الشكلية للخطاب الإداري 11.لغة الخطاب الإداري 12.نماذج من المراسلات الإدارية

Learning and Teaching Strategies

اس ريانيجيات التعلم والتعليم

Strategies	سيتم تقييم المقرر الدرا يس من خلال مجموعة متنوعة من الامتحانات والواجبات والعروض والمشاريـــع. قد تشمل أساليب التقييم اختبارات مكتوبة، أبحاث علمية، تقارير تقنية، عروض شفوية، والمشاركة ·يف أنشطة الصف.

Student Workload (SWL)

الحمل الدرا يس للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدرا يس المنتظم للطالب خلال الفصل	32	**Structured SWL (h/w)** الحمل الدرا يس المنتظم للطالب أسبوعيا	2.1
Unstructured SWL (h/sem) الحمل الدرا يس غ ي المنتظم للطالب خلال الفصل	68	**Unstructured SWL (h/w)** الحمل الدرا يس غ ي المنتظم للطالب أسبوعيا	4.5
Total SWL (h/sem) الحمل الدرا يس الك يلي للطالب خلال الفصل	**50**		

Module Evaluation

تقييم المادة الدراسية

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

	Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري
	Material Covered
الاسبوع الاول	مقدمة عن الأخطاء اللغوية –التاء المربوطة والطويلة والتاء المفتوحة
الاسبوع الثا ٰ ين	قواعد كتابة الالف الممدودة والمقصورة – الحروف الشمسية والقمرية
الاسبوع الثالث	الضاد والظاء
الاسبوع الرابع	كتابة الهمزة
الاسبوع الخامس	علامات ال ريقيم
الاسبوع السادس	الاسم والفعل والتفريق بينهما
الاسبوع السابع	المفاعيل
الاسبوع الثامن	العـــدد

الاسبوع التاسع, العاشر	تطبيقات الأخطاء اللغوية الشائعة
الاسبوع الحادي عشر	النون والتنوين ـ معا ً ين حروف الجر
الاسبوع الثا ني عشر	الجوانب الشكلية للخطاب الإداري
الاسبوع الثالث عشر	لغة الخطاب الإداري
الاسبوع الرابع عشر	نماذج من المراسلات الإدارية

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	• 6،الاملاء الواضح :عبد المجيد النعي يم ،دحام الكيال ،مكتبة دار المتن. يب ، بغداد ط • دروس ً اللغة والنحو والاملاء لموظ ً يف الدولة : اسماعيل حمود عطوان واخرون مطبعة وزارة ال التربية رقم (3) بغداد ،ط 2 ،1984م.	Yes
Recommended Texts	• اللغة العربية العامة لأقسام غ ي الاختصاص : عبد القادر حسن ام ً ي واخرون ،وزارة التعليم العا يل والبحث العل يم ،ط2 ،2000م. • من و يح الادب العر . ين :هفال محمد ام ً ي ،مطبعة السعدون ،بغداد.	Yes
Websites	• www.dalilalarab.com • www.learningarabic.net	

Grading Scheme

مخطط الدرجات

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

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

Module Information معلومات المادة الدراسية					
Module Title	**Computer 1**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☒ **Lecture** ☐ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	NTU103				
ECTS Credits	**3**				
SWL (hr/sem)	**75**				
Module Level	1		**Semester of Delivery**	2	
Administering Department	UAV		**College**	TECM	
Module Leader	Dr. Omar Talal Mahmood		**e-mail**	Omar.talal@ntu.edu.iq	
Module Leader's Acad. Title	Assit.Prof.		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Dr. Omar Talal Mahmood		**e-mail**	Omar.talal@ntu.edu.iq	
Peer Reviewer Name			**e-mail**		
Review Committee Approval			**Version Number**	1.0	

Relation With Other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	None
Co-requisites module	None	**Semester**	None
Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية			
Module Aims أهداف المادة الدراسية	An introduction to computer science will be achieved through overviewing the computer system and identifying its components together with introducing the interaction needed between these components for performing solutions for given tasks regardless of the programming languages used. The student will recognize the different		

	generations to programming languages. This course aims to prepare a program designer. The fundamental stages of the development of the program life cycle must be studied. The focus on this course will be on ways to design the solution to a given problem either by writing an algorithm or by drawing a flowchart. Also, program control flow must be recognized. Moreover, the stages for compiling and processing a given program must be identified. Furthermore, the common methodologies for programming will be studied.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	At the end of this course, the students should be able to: - Use scientific reasoning and logical thinking for describing problems, identifying inputs, processes and desired outputs preparing for the design process. - Describe the purposes of program development life cycle (PDLC). - Design solutions to problems through flowcharts and algorithms. - Process given or online materials and solutions, understand and analyze them. - Use sequence, selection and repetition structures for problem solving process.
Indicative Contents المحتويات الإرشادية	Indicative contents include the following: - Overview of the computer system, Computer system components, Hardware components, Software components, Interaction between computer components for executing Computer programs. - Different generations to programming languages. - The fundamental stages of the program development life cycle. Analyze problems, design solution, Code the design, Debug, Test, Document, Maintain, Redesign and extend the program. - Ways to design the solution of a given problem, Writing the solution steps through an algorithm, By drawing through a flowchart. - Program control flow. Sequential program flow, Selective PF, Repetitive PF, - Stages for compiling and processing a given program. - Methodologies of programming languages. - C++ Programming language, Program structure, Processing C++ program, Control structures for Sequential, Branched, and Looping
Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time

	refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering types of simple experiments involving some sampling activities that are interesting to the students.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	48	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	3
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	77	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	5
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% (5)	5 and 10	LO #1, LO #2, LO #3, and LO #4
	Assignments	2	10% (10)	3 and 14	LO #1, LO #3, and LO #5
	Projects	1	15% (10)	Continuous	All
	Report	1	5% (5)	13	All
Summative assessment	**Midterm Exam**	2hr	10% (10)	8	LO #1, LO #3, and LO #4
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	Part 1: Introduction to Computer System Part 2: Safety and security measures when dealing with a computer
Week 2	Computer System Components
Week 3	Part 1: Generations of Programming Languages

	Part 2: Fields of study in computer science Part 3: Essential concepts in computer science
Week 4	Program Development Life Cycle: Part I
Week 5	Program Development Life Cycle: Part II
Week 6	Program Design: Flowcharts
Week 7	Program Design: Algorithms Program Control Flow
Week 8	**Midterm Exam**
Week 9	Programming with Problem Analysis-Coding-Execution Cycle
Week 10	Programming Methodologies
Week 11	Structure of C++ Program
Week 12	Steps For Processing C++ Program
Week 13	Constructs in C++ for Selection: Part I
Week 14	Constructs in C++ for Selection: Part II Constructs in C++ for Repetition
Week 15	**Preparatory week before the final exam**

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

GRADING SCHEME مخطط الدرجات				
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Note:				

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- **Contact Information**

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