	Ministry of Higher Education and Scientific Research - Iraq University of Warith Al-Anbiyaa College of Engineering Aircarft Engineering Department	

MODULE DESCRIPTOR FORM

Module Information

Module Title	Computer Science		**Module Delivery**	
Module Type	BASIC			
Module Code	UOW108		**Theory** **Lab**	
ECTS Credits	3			
SWL (hr/sem)	75			
Module Level	1	**Semester of Delivery**	1	
Administering Department	Aircraft Engineering	**College**	Engineering	
Module Leader	Alaa Akram Jawad	**e-mail**	alaa.ak@uowa.edu.iq	
Module Leader's Acad. Title	Assistant Lecturer	**Module Leader's Qualification**	MSc IT	
Module Tutor	None	**e-mail**	None	
Peer Reviewer Name		**e-mail**		
Review Committee Approval	25/9/2024	**Version Number**	2024	

Relation With Other Modules

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

Module Aims, Learning Outcomes and Indicative Contents

Module Aims	1. This course teaches the student how to apply fundamental procedural programming concepts to the programming language C++. Programming principles and constructs, such as data types, common control flow structures, basic data structures, and console input/output will be explained. 2. To provide sufficient knowledge of programming Language C++ to write straightforward programs. 3. The development of the student's ability to apply the knowledge in order to be able to correct analysis of the question and thus put the appropriate assumptions and interpretation to reach a solution. Through textbooks and lectures, in addition to the (programming I) Laboratory experiments. 4. Knowledge and Understanding • Use a special programming language C++ compiler with the issuance of a modern software solves all the complex questions. • Solution of different equations and problems using C++ language. • Model Description Terms of solution for each and every way mathematical operation. 1. To develop the student to have specific skills • Logical thinking when solving problems • The use of mathematical equations. • Determine the appropriate method of solution. • Explain ways to enter matrices and vectors
Module Learning Outcomes	1. Enable the student to learn and understand the basic of: • Evolution of Computers, Generation of Computers, Super Computers, Mainframe Computers, Personal Computers (Different Types)) • Classification of Computers Analog Digital and Hybrid Computers, Classification of Computers according to size • Characteristics of Computers, Block Diagram of a Digital Computer. 2. The student should Know the general information of Operating systems (OS), Types of OS, and the other subjects as it sequenced by the Course Materials and Schedule. 3. Understanding the Programming Concepts, such as: • Global concept in any programming languages.

	• Structured Programming. • Algorithms and Flowcharts with Examples 4. The ability to make and build programs in different ME applications. 5. Enable the student to learn the Variables, Data Types, Arithmetic operators, Assignment operators, Comparison operators, Logical operators. 6. The student should understand and be able to relate Basic Input / Output, Control Structures, and Functions.
Indicative Contents	Indicative content includes the following. Introduction to Computers I+ II (History) Evolution of Computers, Generation of Computers, Super Computers, Mainframe Computers, Personal Computers (Different Types)), Classification of Computers Analog Digital and Hybrid Computers, Classification of Computers according to size, Characteristics of Computers, Block Diagram of a Digital Computer, Operating systems (OS), Types of OS, Dos and Windows operating systems. [3 hrs] Introduction to Programming Concepts I, Global concept in any programming languages, Structured Programming Algorithms and Flowcharts with Examples. [3 hrs] Introduction for C++ programming language Instructions for using (Dev) software, Basics of C++, Program Structure. [3 hrs] Variables, Data Types int • double • float • string • bool • Constants • , Arithmetic operators Assignment operators, Comparison operators, Logical operators. [4 hrs] Basic Input / Output Course input cin>>, Course output cout<< [4 hrs] Control Structures if statement, if…else Statement, if...else if...else Statement, switch Statement Iteration structures (loops), For loop, While Loop [5 hrs] Functions (I)+ (II) [5 hrs]
Learning and Teaching Strategies	
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 type of simple experiments involving some sampling activities that are interesting to the students.

Student Workload (SWL)			
Structured SWL (h/sem)	48	**Structured SWL (h/w)**	3
Unstructured SWL (h/sem)	27	**Unstructured SWL (h/w)**	1.8
Total SWL (h/sem)	75		

Module Evaluation

		Time/ Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	5	10% (10)	3,5, 8, 12, 14	LO # 1 to 6
	Assignments	15	15% (15)	Continuous	LO # 1 to 6
	Projects / Lab.	Lab. 10	10% (10)	Continuous	LO # 1 to 6
	Report	1	5% (5)	13	LO # 1 to 6
Summative assessment	**Midterm Exam**	2 hrs.	10% (10)	7	LO # 1 to 6
	Final Exam	3 hrs.	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

	Material Covered
Week 1	Introduction to Computers I (History) • Evolution of Computers, Generation of Computers, Super Computers, Mainframe Computers, Personal Computers (Different Types). • Classification of Computers Analog Digital and Hybrid Computers, Classification of Computers according to size. • Characteristics of Computers, Block Diagram of a Digital Computer.

Week 2	Introduction to Computers II (History) • Operating systems (OS). • Types of OS, Dos and Windows operating systems.
Week 3	Introduction to Programming Concepts I, • Global concept in any programming languages. • Structured Programming. • Algorithms and Flowcharts with Examples.
Week 4	Introduction for C++ programming language • Instructions for using (Dew) software • Basics of C++ • Structure of a program
Week 5	Variables, Data Types • int • double • float • string • bool • Constants • • Arithmetic operators • Assignment operators • Comparison operators • Logical operators
Week 6	Basic Input / Output • Course input cin>> • Course output cout<<
Week 7	Control Structures • if statement • if…else Statement • if...else if...else Statement • switch Statement
Week 8	
Week 9	Applications and case study.
Week 10	Control Structures • Iteration structures (loops) • For loop • While Loop • Applications
Week 11	
Week 12	Functions (I) + Applications
Week 13	
Week 14	Functions (II) + Applications
Week 15	
Week 16	**Preparatory week before the Final Exam**

Delivery Plan (Weekly Lab. Syllabus)

	Material Covered
Week 1	Exp. 1: Practical learning of computers types moreover to software and hardware's.
Week 2	Exp. 2: Practical learning of operating systems types.
Week 3	Exp. 3: Simple code and flowchart about Program structure.
Week 4	Exp. 4: Simple code of C++.
Week 5	Exp. 5: Basics code with variables and data types.
Week 6	Exp. 6: Basic code with Input / Output.
Week 7	Exp. 7: C++ code with control structures as if statement.
Week 8	Exp. 8: C++ code with control structures as switch statement.
Week 9	Exp. 9: Applications and case study.
Week 10	Exp. 10: C++ code with control structures as loops, for, and While statements.
Week 11	Exp. 11: Applications of control structures as loops, for, and While statements.
Week 12	Exp. 12: C++ code with Functions (I)
Week 13	Exp. 13: Functions (I) applications.
Week 14	Exp. 14: C++ code with Functions (II)
Week 15	Exp. 15: Functions (II) applications.

Learning and Teaching Resources

	Text	Available in the Library?
Required Texts	Lecture notes from the Module Leader	Yes
Recommended Texts	STARTING OUT WITH C++ From Control Structures through Objects. EIGHTH EDITION Tony Gaddis, Haywood Community College. Copyright © 2015, 2012, 2009 Pearson Education, Inc.,	No

	publishing as Addison-Wesley. ISBN 13: 978-0-13-376939-5 ISBN 10: 0-13-376939-9	
Websites	https://cplusplus.com/doc/	

APPENDIX:

GRADING SCHEME				
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.

	Ministry of Higher Education and Scientific Research - Iraq University of Warith Al-Anbiyaa College of Engineering Aircraft Engineering Department	

MODULE DESCRIPTOR FORM

Module Information

Module Title	Democracy and Human Rights		**Module Delivery**	
Module Type	BASIC		**Theory**	
Module Code	UOW105			
ECTS Credits	2			
SWL (hr/sem)	50			
Module Level	1	**Semester of Delivery**	1	
Administering Department	**Aircraft Engineering**	**College**	**Engineering**	
Module Leader	Musa Ali	**e-mail**	mousa.ali@uowa.edu.iq	
Module Leader's Acad. Title	Assist. Lect.	**Module Leader's Qualification**	MSc	
Module Tutor		**e-mail**		
Peer Reviewer Name		**e-mail**		
Review Committee Approval	26/09/2024	**Version Number**	2024	

Relation with Other Modules

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

Module Aims, Learning Outcomes and Indicative Contents	
Module Aims	1. Learn about freedom and democracy in various societies and throughout the ages 2. Identify their types and how the systems of some countries changed from one system to another 3. Relativity in the meaning of freedom 4. Knowledge of the concept of human rights, its characteristics and categories 5. Learn about human rights in human history and heritage 6. Knowledge of human rights in heavenly religions 7. Knowledge of civil, political and economic rights
Module Learning Outcomes	1. Learn about freedom and democracy in various societies and throughout the ages 2. Identify their types and how the systems of some countries changed from one system to another 3. Knowledge of the concept of human rights, its characteristics and categories 4. Learn about human rights in human history and heritage 5. Knowledge of civil, political and economic rights
Indicative Contents	**The indicative contents include the following:** 1. The concept of human rights, its characteristics and categories (2 hours) 2. Human rights in history and human heritage (2 hours) 3. Human rights in divine religions and civil rights (2 hours) 4. Prohibition of weapons of mass destruction (2 hours) 5. Political, economic, social and cultural rights (2 hours) 6. Elections and human rights (2 hours) 7. International recognition of human rights and legal sources of human rights 8. Non-governmental organizations and their role in defending human rights (2 hours) 9. Democracy and political systems (2 hours) 10. Democracy in Greek civilization and its comparison with modern democracy (2 hours) 11. Concepts of democracy (2 hours) 12. Types of democracy (2 hours) 13. The relationship between human rights and democracy (2 hours) 14. Guarantees of public freedoms (2 hours)

	15.General review (2 hours)

Learning and Teaching Strategies	
Strategies	Lectures are given live, in addition to watching auxiliary visual or film material.

Student Workload (SWL)			
Structured SWL (h/sem)	33	**Structured SWL (h/w)**	2
Unstructured SWL (h/sem)	17	**Unstructured SWL (h/w)**	1.2
Total SWL (h/sem)	50		

Module Evaluation

		Time/ Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	4	20% (20)	3, 6, 9, 12	LO #1 - 5
	Assignments	2	10% (10)	5, 10	LO #1 - 5
	Projects / Lab.	-	-	-	-
	Report	1	10% (10)	13	LO #1 - 5
Summative assessment	**Midterm Exam**	2 hrs.	10% (10)	7	LO #1 - 5
	Final Exam	3 hrs.	50% (50)	16	All

Total assessment	100% (100 Marks)		

Delivery Plan (Weekly Syllabus)	
	Material Covered
Week 1	The concept of human rights, its characteristics and categories
Week 2	Human rights in human history and heritage
Week 3	Human rights in divine religions and civil rights
Week 4	Prohibition of weapons of mass destruction
Week 5	Political, economic, social and cultural rights
Week 6	Elections and human rights
Week 7	International recognition of human rights and legal sources of human rights
Week 8	Non-governmental organizations and their role in defending human rights
Week 9	Democracy and political systems
Week 10	Democracy in Greek civilization and its comparison with modern democracy
Week 11	Concepts of democracy
Week 12	Types of democracy
Week 13	The relationship between human rights and democracy
Week 14	Guarantees of public freedoms
Week 15	General review
Week 16	A week of preparation before the final exam

Delivery Plan (Weekly Lab. Syllabus)	
	Material Covered
Week 1	Exp. 1:
Week 2	Exp. 2:
Week 3	Exp. 3:
Week 4	Exp. 4:
Week 5	Exp. 5:

Week 6	Exp. 6:
Week 7	Exp. 7:

Learning and Teaching Resources		
	Text	**Available in the Library?**
Required Texts	1. ميثاق الأمم المتحدة في مجال حقوق الإنسان 2. الدساتير العالمية المعتمدة 3. المواثيق والمعاهدات الدولية 4. كراسات وإصدارات منظمة حقوق الإنسان الدورية	Yes
Recommended Texts	- كتيبات واصدارات دورية لمنظمات حقوق الأنسان	Yes
Websites	- https://www.amnesty.org/ar/ - https://www.un.org/ar/about-us/un-charter - https://www.ohchr.org/sites/default/files/Documents/Publications/CoreTreatiesar.pd	

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	C – Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	مقبول بقرار	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note:

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UNIVERSITY OF WARITH AL-ANBIYAA
COLLEGE OF ENGINEERING
جامعة وارث الانبياء
2017 أسست
كليـــة الهندســـــة

	Ministry of Higher Education and Scientific Research - Iraq University of Warith Al-Anbiyaa College of Engineering Aircraft Engineering Department	

MODULE DESCRIPTOR FORM

Module Information

Module Title	Physics	**Module Delivery**	
Module Type	CORE		**Theory** **Lab** **Tutorial**
Module Code	ENG113		
ECTS Credits	8		
SWL (hr/sem)	200		
Module Level	1	**Semester of Delivery**	1
Administering Department	**Aircraft Engineering**	**College**	**Engineering**
Module Leader	Mohammed Wahhab Kazim	**e-mail**	dr.mohammad.wahab@uokerbala.edu.iq
Module Leader's Acad. Title	Professor	**Module Leader's Qualification**	Ph.D.
Module Tutor		**e-mail**	
Peer Reviewer Name		**e-mail**	
Review Committee Approval	26/09/2024	**Version Number**	2024

Relation With Other Modules

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

Module Aims, Learning Outcomes and Indicative Contents

Module Aims	1. To assist students to understand the fundamental principles of engineering mechanics (Statics and Dynamics) as applied to Physics. 2. To develop problem solving skills and understanding of principles of Physics theory through the application of techniques as they relate to the different fields of engineering. 3. To develop problem solving skills and understanding of Newton's law through the application of techniques. 4. To understand how analysis of vectors, forces, resultant, moments, couples, and equilibrium in two and three dimensions' problems. 5. To comprehend how clarification of friction and analysis in two dimensions' problems. 6. To understand the motion of particles (kinematics and kinetic), and the other subjects as it sequenced.
Module Learning Outcomes	1. Enable the student to learn and understand the basic physical concepts, mass, forces, quantities and vectors at Mechanical Engineering 2. The student should understand and be able to apply Newton's Laws. 3. The student should Know the analysis of forces in Two Dimensions 4. The student should Know the analysis of System Isolation and the Free-Body Diagram 5. The student should Know how can find the Equilibrium Conditions 6. The student should Know the analysis of forces in Three Dimensions 7. The student should know the analysis of the Friction forces and their types, and the other subjects as it sequenced by the Course Materials and Schedule. 8. The student should understand and be able to relate the kinematics of particles 9- The student should study the Kinematics of particles Introduction and Rectilinear motion of dynamics problems in straight line 10- The student should study the Kinematics of particles as a Curvilinear motion. 11- The student should understand and be able to apply Newton's Laws to particles to solve problems related to dynamic behavior.
Indicative Contents	Indicative content includes the following. Part A - Introduction to Physics: The basic physical concepts, mass, forces, quantities and vectors at Mechanical Engineering [6 hrs]. Part B - Statics Two-Dimensional Force Systems:

	External and Internal Effects, Principle of Transmissibility, Force Classification, Rectangular Components, Moments and Couples, and Resultants [18 hrs]. Equilibrium in Two Dimensions: System Isolation, the Free-Body Diagram, and Equilibrium Conditions [12 hrs]. Friction: Introduction, and type of friction, and Dry Friction [6 hrs]. Three-Dimensional Force Systems: Rectangular Components, Moments and Couples, and Resultants [12 hrs]. Equilibrium in Three Dimensions: System Isolation, the Free-Body Diagram, Equilibrium Conditions and the Categories of Equilibrium [7 hrs]. Part C - Kinematics of particles: Rectilinear motion [5 hrs]. Curvilinear motion: x-y coordinates, Normal – tangential coordinates, and Polar – coordinates [5 hrs]. Relative Motion (Translating Axes) Relative motion, Motion relative to a frame in translation, and Constrained Motion of Connected Particles [5 hrs]. Part D - Kinetics of Particles: Newton's 2nd law, Rectangular Components, Tangential and normal components, Radial and transverse components [6 hrs]. Kinetics of particles: Introduction, Force, Mass, Acceleration, Newton's 2nd law, Rectangular components, Tangential and normal components, Radial and transverse components and problems [10 hrs].
Learning and Teaching Strategies	
Strategies	Type something like: The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering type of simple experiments involving some sampling activities that are interesting to the students.

Student Workload (SWL)			
Structured SWL (h/sem)	108	**Structured SWL (h/w)**	7
Unstructured SWL (h/sem)	92	**Unstructured SWL (h/w)**	6.2
Total SWL (h/sem)	200		

Module Evaluation					
		Time/ Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	4	20% (20)	3, 6, 9, 12	LO #1-11
	Assignments	2	10% (10)	5, 10	LO #1-11
	Projects / Lab.	Lab. 5	10% (10)	Continuous	LO #1, 2, 3, 4, 7, 10, 11
	Report	-	-	-	-
Summative assessment	**Midterm Exam**	2 hrs.	10% (10)	7	LO #1-11
	Final Exam	3 hrs.	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)	
	Material Covered
Week 1	**Introduction to Physics:** Basic concepts, Newton's Law, and Vectors
Week 2	**Two-Dimensional Force Systems:** External and Internal Effects , Principle of Transmissibility, and Force Classification
Week 3	**Two-Dimensional Force Systems:** Rectangular Components, and Moments and Couples.
Week 4	**Two-Dimensional Force Systems:** Resultants
Week 5	**Equilibrium in Two Dimensions:** System Isolation and the Free-Body Diagram
Week 6	**Equilibrium in Two Dimensions:** Equilibrium Conditions
Week 7	**Friction:** Introduction, and type of friction, and Dry Friction.
Week 8	**Three-Dimensional Force Systems:** Rectangular Components, and Moments and Couples.
Week 9	**Three-Dimensional Force Systems:** Resultants

Week 10	**Equilibrium in Three Dimensions:** System Isolation and the Free-Body Diagram, and Equilibrium Conditions and the Categories of Equilibrium
Week 11	**kinematics particles:** Introduction and Rectilinear motion.
Week 12	**Curvilinear motion:** Plane Curvilinear Motion Rectangular Coordinates (x-y), Normal – tangential coordinates (n-t) , and Polar – coordinates (r-Θ).
Week 13	**Relative Motion (Translating Axes)** Motion relative to a frame in translation, Constrained Motion of Connected Particles
Week 14	**Kinetics of particles:** Introduction, Force, Mass, and Acceleration Newton's 2nd law. Rectangular components.
Week 15	**Kinetics of particles:** Tangential and normal components. Radial and transverse components.
Week 16	**Preparatory week before the Final Exam**

Delivery Plan (Weekly Lab. Syllabus)	
	Material Covered
Week 1	Exp. 1: THE STIFFNESS OF LINEAR SPRING (HOOKE'S LAW)
Week 2	Exp. 2: FORCE RESULTANT OF TWO-DIMENSIONAL FORCE SYSTEMS
Week 3	Exp. 3: STATIC FRICTION COEFFICIENT OF SIMILAR AND DISSIMILAR SURFACES
Week 4	Exp. 4: ACHIEVING THE BASIC LAW OF THE ROTATIONAL MOVEMENT
Week 5	Exp. 5:
Week 6	Exp. 6:
Week 7	Exp. 7:

Learning and Teaching Resources		
	Text	**Available in the Library?**
Required Texts	ENGINEERING MECHANICS VOLUME 1 STATICS EIGHTH EDITION (2016) VOLUME 2 DYNAMICS EIGHTH EDITION (2015)	Yes

	Publisher: John Wiley & Sons Singapore Pte. Ltd By James L. Meriam (Author), L. G. Kraige (Author), J. N. Bolton (Author)	
Recommended Texts	VECTOR MECHANICS FOR ENGINEERS: STATICS AND DYNAMICS Publisher : McGraw Hill; 12th edition (2018) by Ferdinand Beer (Author), E. Johnston (Author), David Mazurek (Author), Phillip Cornwell (Author), Brian Self (Author)	No
Websites		

APPENDIX:

GRADING SCHEME				
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

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	Ministry of Higher Education and Scientific Research - Iraq University of Warith Al-Anbiyaa College of Engineering Aircraft Engineering Department	

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information
معلومات المادة الدراسية

Module Title	WORKSHOPS I	**Module Delivery**	
Module Type	BASIC	☐ Theory ☐ Lecture ☐ Lab ☐ Tutorial ■ Practical ☐ Seminar	
Module Code	ENG106		
ECTS Credits	8		
SWL (hr/sem)	200		
Module Level	1	**Semester of Delivery**	1
Administering Department	Aircraft Engineering	**College**	Engineering
Module Leader	Ahmad Saddy Mohamad	**e-mail**	ahmad.saddy@uowa.edu.iq
Module Leader's Acad. Title	Assist. Prof.	**Module Leader's Qualification**	Ph.D.
Module Tutor	Aymen Hussien Salh	**e-mail**	aymen.hussien@uowa.edu.iq
Peer Reviewer Name		**e-mail**	
Review Committee Approval		**Version Number**	1

Relation With Other Modules
العلاقة مع المواد الدراسية الأخرى

Prerequisite module		**Semester**	
Co-requisites module		**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	1-Preparing applied engineers in the field of engineering sciences who are distinguished by a high level of knowledge and technological creativity, in line with the strict standards adopted globally in quality assurance and academic accreditation of the corresponding engineering programs, while adhering to the ethics of the engineering profession. 2. Enable the student to know and understand work systems, risks, and the factors surrounding them. 3. Enable the student to know and understand theoretical principles in handicrafts and measurements.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1- To familiarize the student with the vocabulary of occupational safety and its importance in the field of work. 2- Acquisition of the student's manual operation skills, for example (Filings and Tinsmith workshops), and mechanical operation skills, for example (Turning). 3- Acquisition of the student's mechanical forming skills, for example (Casting and Blacksmithing). 4- The student acquires basic engineering skills such as Welding, Carpentry, and Electrical installations that serve him in the professional field. 5- Enabling the student to operate the various machines and devices in mechanical operations and formation. 6- Cooperative learning by working collectively.
Indicative Contents المحتويات الإرشادية	1. Introducing the student to the basics of the art of turning and milling, types of cold working machines, the skill of dealing with them, choosing metals, operational tools, and methods of measurement and standardization 2. Introducing the student to the basics of the art of casting, hot forming, metal selection, method of working on casting furnaces and tools, and manufacturing casting molds 3. Familiarize students with the basics of cars and the systems they use, as well as maintenance, disassembly, and assembly processes. 4. Introducing students to the basics of household and industrial electrical appliances, the skill of using tools, and designing electrical circuits and control panels 5. Introducing the student to the basics of the art of plumbing, leveling surfaces, the skill of using tools, manufacturing and installing geometric shapes, and methods of measurement and standardization

	6. Introducing the student to the basics of the art of blacksmithing, cold and hot forming of metals, the method of hardening them, and the skills of dealing with hand tools, forming machines, and heating furnaces 7. Introducing the student to the basics of the art of filing and manual operation of metals with the help of manual, electrical, and mechanical tools, the skills of dealing with them, and the methods of measurement and standardization 8. Introducing the student to the basics of the art of welding, the installation and assembly of metals, the types of welding machines, the skills of dealing with them, the types of welding, and the methods of measurement and standardization Introducing the student to the basics of the art of carpentry and woodworking with the help of manual, electrical, and mechanical tools, the skills of dealing with them, and methods of measurement and standardization

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	

Student Workload (SWL)
الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	92	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	8	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

Module Evaluation
تقييم المادة الدراسية

		Time/ Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	5	5% (5)	Continuous	All
	Assignments	5	5% (5)	Continuous	All
	Projects / Lab.	5	25% (25)	Continuous	All
	Report	5	5% (5)	Continuous	All
Summative assessment	**Midterm Exam**	1 hr	10% (10)	7	All
	Final Exam	2 hr	50% (50)	16	All

Total assessment	100%		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Welding workshop. -Occupational safety and its importance in welding workshops. -Introduction to the basics of welding. -Electric arc exercise. -An exercise for welding straight lines in a circular motion (helical).
Week 2	Welding workshop - An exercise for welding straight lines with a crescent movement and other welding methods -Construction welding exercise.
Week 3	Welding workshop. -Welding two pieces together. -Written exam in practical exercises.
Week 4	Casting workshop -Occupational safety and its importance in plumbing workshops. -Introduction to the basics of metal casting. -Simple wooden disc exercise. Half workout.
Week 5	Casting workshop Wheel exercise. Pushing arm exercise.
Week 6	Casting workshop. -Complete pulley exercise. -Circular pole exercise. -Written exam in practical exercises.
Week 7	Blacksmith Workshop -Occupational safety and its importance in blacksmithing workshops. -Introduction to the Basics of Blacksmithing. - Barbell adjustment exercise. -Eight-star exercise. - Exercise forming the number eight in English. -Six formation exercises in English.
Week 8	Blacksmith Workshop -An exercise forming the number five in English. - Exercise forming the number nine in English. . -An exercise in forming an iron model in the form of a circle
Week 9	Blacksmith Workshop - S-shape exercise. - Air hammer hot barbell exercise. - Exercise to form a circle on an electric bending machine.

	- Exercising cold and hot ornament formation. .- A written exam in practical exercises
Week 10	Automotive Workshop -Occupational safety and its importance in car maintenance workshops. -An introduction to cars and their basic parts. -Parts of the engine, how it works, types of engines, and methods of classification.
Week 11	Automotive Workshop - Open the engine and identify the parts -Lubrication system -Cooling system.
Week 12	Automotive Workshop -The fuel system. -The old and new ignition circuits. -Written exam in practical exercises.
Week 13	Turning Workshop -Introduction to lathe machines and identifying their parts -Measuring tools and the use of an oven measuring instrument -Circular column lathing exercise on different diameters.
Week 14	Turning Workshop -Exercise using the pen (semicircular R) brackets. An exercise in making different angles using a pen (square + angle pen 55).
Week 15	Turning Workshop - Making shaft with different diameter exercises using (left and right pen) - Workout (Tube Connection). -Written exam in practical exercises.
Week 16	**Final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Workshop technology and measurements, Ahmed Salem Al-Sabbagh,	Yes
Recommended Texts		
Websites		

APPENDIX:

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

Note:

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

UNIVERSITY OF WARITH AL-ANBIYAA
COLLEGE OF ENGINEERING
وارث الانبياء
جامعة
2017 اسست
كليـــة الهندســـــة

	Ministry of Higher Education and Scientific Research - Iraq University of Warith Al-Anbiyaa College of Engineering Aircraft Engineering Department	

MODULE DESCRIPTOR FORM

Module Information

Module Title	Thermodynamics I		**Module Delivery**	
Module Type	CORE			
Module Code	ENG114			**Theory** **Lab** **Tutorial**
ECTS Credits	7			
SWL (hr/sem)	175			
Module Level	1	**Semester of Delivery**	1	
Administering Department	**Aircraft Engineering**	**College**	**Engineering**	
Module Leader	Basim Sachit Attiya	**e-mail**	basim.sa@uowa.edu.iq	
Module Leader's Acad. Title	Assist. Lec.	**Module Leader's Qualification**	MSc.	
Module Tutor		**e-mail**		
Peer Reviewer Name		**e-mail**		
Review Committee Approval	26/09/2024	**Version Number**	2024	

Relation With Other Modules

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

Module Aims, Learning Outcomes and Indicative Contents

Module Aims	1. This course deals with the fundamentals of Thermodynamics including thermodynamic systems and properties, and relationships among the thermos-physical properties. 2. Description of the substance and phases including the theories dealing with the analytical formulation of their properties. 3. Description of the thermal system and its surroundings with interaction characteristics between them. 4. Awareness of units and dimensions in standard systems of units. 5. Definition of Energy and its forms, transformation means and tools. 6. Mathematical formulation of the First and Second laws of thermodynamics, their limitations and applications of these basic laws in thermodynamic systems. 7. Application of the physical and mathematical concepts to thermodynamic processes and evaluating their impacts on performance and developing techniques.
Module Learning Outcomes	1. Identify fundamental concepts relevant to thermodynamics. 2. Students will know the definition of adiabatic, isobaric, isothermal and isometric processes. 3. Students will be familiar with the concept of a reversible engine and the Carnot cycle. 3. To understand and analyze the influence of fluid properties on the behaviour of engineering systems and to be able to analyze systems using the concepts of conservation of mass and energy. 4. Students will be able to find the maximum possible efficiency of heat engines and calculate the maximum coefficient of performance of a heat pump or refrigerator. 5. On successful completion of the module, students should be able to show experience and enhancement of discipline-specific practical skills in using appropriate modelling and analytical methods to solve thermodynamics problems. 6. To understand the thermodynamic behaviour of different fluids and their importance in a heat pump or a refrigerator. 7. An understanding of the everyday implications of the laws of thermodynamics and an ability to communicate these implications to a lay audience.
Indicative Contents	Indicative content includes the following: **<u>Part A - Basic concepts</u>** **- Systems of units & dimensions**. Force, Pressure. Mass, volume, sp. volume & density. **- Thermodynamic equilibrium.** Conditions of equilibrium, Temperature and the Zeroth law of thermodynamics.

Thermometers and Temperature scales. [4hrs]

- Energy:
Types of thermodynamic system.
Conventional and renewable sources of energy.Stored and transported energy. Internal energy. Potential and kinetic energy. Elastic energy (springs). [8hrs]
Heat energy and the Specific heat capacity. Work energy and Power.
Equivalent forms of work.Sign convention of heat & work.[8hrs]

- Properties of working substance:
Intensive & extensive properties. Single-phase system (Ideal gas), Equation of state for ideal gases, Real gas behavior.[4hrs]

Part B- First law of thermodynamics:
Conservation of energy principle, Statements of first law, Energy as system property, Non-flow energy equation, Practical applications of First law of thermodynamics. [4 hrs]

- Thermodynamic processes in closed system:
State function & path function. Constant volume process. Constant pressure process. Constant temperature process. Adiabatic &Polytropic process. [4hrs]
Flow systems:
Energy equation of flow systems. Steady & unsteady process.Boiler & condenser. Compressor & turbine. [8hrs]
Nozzle & diffuser.Throttling valves. [9hrs]
Reversible & irreversible process for flow systems (Frection, Temperature difference Free unrestrained explantion… etc.). [8hrs]

- Entropy:
Entropy & energy degradation, Entropy as system property.
Fundamental entropy equations. [8hrs]
Construction of (T – s) diagram for gases, Carnot cycle on (T – s) diagram.
General entropy equations for gases. [8hrs]
Entropy change in reversible processes.Entropy change in irreversible processes. [12hrs]

Part C- Second law of thermodynamics:
Relation between first & second laws, Statements of the second law.
Heat engine & thermal efficiency, Carnot power cycle, Work & efficiency in Carnot power cycle, Reversed heat engine & COP., Reversed Carnot cycle for cooling (Work and COP in Carnot cooling cycle).[12hrs]

Learning and Teaching Strategies	
Strategies	• Teaching Method 1 – Lectures (Description: Attendance Recorded: Yes) • Teaching Method 2 – Tutorials (Description: Attendance Recorded: Yes) • Teaching Method 3 – Practical (Description: Practical homework assignments. Attendance Recorded: No) • Teaching Method 4 – Unscheduled Directed Student Hours (time spent away from the timetabled sessions but directed by the teaching staff). • Teaching Method 5- Laboratory sessions(Providing experimental supplementary to promote the engineering sense of students)

Student Workload (SWL)			
Structured SWL (h/sem)	78	**Structured SWL (h/w)**	5
Unstructured SWL (h/sem)	97	**Unstructured SWL (h/w)**	6.5
Total SWL (h/sem)	175		

Module Evaluation					
		Time/ Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	4	20% (20)	3, 6, 9, 12	LO #1-7
	Assignments	2	10% (10)	5, 10	LO #1-7
	Projects / Lab.	Lab. 5	10% (10)	Continuous	LO #1, 2, 3, 4, 5, 6
	Report	-	-	-	-
Summative assessment	**Midterm Exam**	2 hrs.	10% (10)	7	LO #1-7
	Final Exam	3 hrs.	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)	
	Material Covered
Week 1	**Basic concepts**: **Systems of units & dimensions**: Force, Pressure,Mass, volume, sp. volume & density.**Thermodynamic equilibrium**: Conditions of equilibrium, Temperature and the

	Zeroth law of thermodynamics, Thermometers and Temperature scales.
Week 2	**Energy:** Types of thermodynamic system, Conventional and renewable sources of energy, Stored and transported energy, Internal energy, Potential and kinetic energy, Elastic energy (springs).
Week 3	Heat energy and the Specific heat capacity,Work energy and Power, Equivalent forms of work, Sign convention of heat & work.
Week 4	**Properties of working substance:** Intensive & extensive properties, Single-phase system (Ideal gas), Equation of state for ideal gases, Real gas behavior.
Week 5	**First law of thermodynamics:** Conservation of energy principle, Statements of first law, Energy as system property, Non-flow energy equation, Practical applications of First law of thermodynamics.
Week 6	**Thermodynamic processes in closed system:** State function & path function, Constant volume process, Constant pressure process.
Week 7	Constant temperature process, Adiabatic &Polytropic process.
Week 8	**Flow systems:** Energy equation of flow systems, Steady & unsteady process, Boiler & condenser, Compressor & turbine.
Week 9	Nozzle & diffuser, Throttling valves, Reversible & irreversible process for flow systems (Friction, Temperature difference, Free unrestrained expansion… etc.).
Week 10	**Entropy:** Entropy & energy degradation, Entropy as system property, Fundamental entropy equations.
Week 11	Construction of (T – s) diagram for gases, Carnot cycle on (T – s) diagram, General entropy equations for gases.
Week 12	Entropy change in reversible processes, Entropy change in irreversible processes.
Week 13	**Second law of thermodynamics:** Relation between first & second laws, Statements of the second law, Heat engine & thermal efficiency.
Week 14	Carnot power cycle, Work & efficiency in Carnot power cycle.
Week 15	Reversed heat engine & COP, Reversed Carnot cycle for cooling (Work and COP in Carnot cooling cycle).
Week 16	**Preparatory week before the Final Exam**

Delivery Plan (Weekly Lab. Syllabus)	
	Material Covered
Week 1	Exp. 1: Boyle's Law
Week 2	Exp. 2: Gas thermometer
Week 3	Exp. 3: Specific Heat
Week 4	Exp. 4: Ratio of specific heat

Week 5	Exp. 5: Reversed heat engine
Week 6	Exp. 6: Calorific value of gaseous fuel
Week 7	Exp. 7:

Learning and Teaching Resources

	Text	Available in the Library?
Required Texts	Yuns A. and Michael A. Boles and Mehmet Kanoğlu, "Thermodynamics: An Engineering Approach", 10th Edition., 2024, ISBN 978-1-266-15211-5	Yes
	Rajput, R. K. A textbook of engineering thermodynamics. Laxmi Publications, 2005.	Yes
Recommended Texts	Estop T. and McConckyA., "Applied thermodynamics for engineering technologists", 2008.	Yes
Websites	--	

APPENDIX:

GRADING SCHEME				
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.

	Ministry of Higher Education and Scientific Research - Iraq University of Warith Al-Anbiyaa College of Engineering Aircraft Engineering Department	

MODULE DESCRIPTOR FORM

Module Information

Module Title	Mathematics I		**Module Delivery**	
Module Type	CORE			
Module Code	ENG112		**Theory**	
ECTS Credits	6			
SWL (hr/sem)	150			
Module Level	1		**Semester of Delivery**	1
Administering Department	Aircraft Engineering		**College**	Engineering
Module Leader	Aws Akram Mahmoud		**e-mail**	aws@uowa.edu.iq
Module Leader's Acad. Title	Assist. Prof		**Module Leader's Qualification**	Ph.D.
Module Tutor	None		**e-mail**	None
Peer Reviewer Name			**e-mail**	
Review Committee Approval	26/09/2024		**Version Number**	2024

Relation With Other Modules

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

Module Aims, Learning Outcomes and Indicative Contents

Module Aims	1. To provide a course of high academic quality in Mathematics in a challenging and supportive learning environment that encourages students to reach their full potential, personally and academically. 2. To provide a course that is suitable both for students aiming to pursue research and for students going into other careers. 3. To provide an integrated system of teaching which can be tailored to the needs of individual students. 4. To develop in students the capacity for learning and clear logical thinking. 5. To continue to attract and select students of outstanding quality. 6. To provide an intellectually stimulating environment in which students have the opportunity to develop their skills and enthusiasm to their full potential.
Module Learning Outcomes	Knowledge and Understanding: This Course will develop learners' ability to: 1. Understand and use mathematical concepts and relationships 2. Select and apply operational skills in algebra, geometry, trigonometry and statistics within mathematical contexts 3. Select and apply skills in numeracy 4. Use mathematical models 5. Use mathematical reasoning skills to interpret information, select a strategy to solve a problem, and communicate solutions. Subject-specific skills: It is expected that learners will develop the following: 6. Broad, generic skills through this Course. 7. Skills for Learning, and drawn from the main skills areas listed below. 8. Skills for Life 9. and Skills for Work These must be built into the Course where there are appropriate opportunities.
Indicative Contents	Indicative content includes the following. **Vector and the geometry of space:** Three-Dimensional Coordinate Systems, Vector Algebra Operations, unit Vectors, the Midpoint of a Line Segment, The Dot Product, The angle between Vectors, and The Cross Product. [12 hrs] **Matrices:** Types of matrices. Elementary operations with matrices and vectors. Determinants. Linear equations. Row reduction method. Cramer's rule. Applications. [18 hrs] **Limits and continuity:** Rates of Change and Limits, calculating limits using the limit law, infinite

	limits and vertical asymptotes, continuity, tangents and derivatives. [12 hrs] **Differentiation:** Inverse Functions and Their Derivatives. Natural Logarithms. The Exponential and Logarithm Functions. Trigonometric Functions. Inverse Trigonometric Functions. Hyperbolic Functions. Inverse Hyperbolic Functions. Calculating Derivatives from the Definition. Differentiation Rules for (functions). Derivatives of Trigonometric Functions. The Chain Rule. Implicit Differentiation. Derivatives of Higher Order. [22 hrs] **Applications of derivatives:** Extreme Values of Functions. Increasing and Decreasing Functions. Concavity and Curve Sketching. Applied Optimization Problems. L'Hôpital's Rule. The Mean Value Theorem. Motion along a Line: Displacement, Velocity, Speed, Acceleration. Related Rates Equations (application on Implicit Differentiation). Approximate calculation. [18 hrs] **General Applications.** [5 hrs]
Learning and Teaching Strategies	
Strategies	All lectures reflect the higher values, purposes and principles. They offer flexibility, provide more time for learning, focus on skills and applying to learn, and scope for personalization and choice. In this Course, and its component Units, there will be an emphasis on skills development and the application of those skills. Assessment approaches will be proportionate, fit for purpose and will promote best practices, enabling learners to achieve the highest standards they can. This course provides learners with opportunities to continue to acquire and develop the attributes and capabilities of the four capacities, as well as skills for learning, skills for life and skills for work.

Student Workload (SWL)

Structured SWL (h/sem)	63	**Structured SWL (h/w)**	4
Unstructured SWL (h/sem)	87	**Unstructured SWL (h/w)**	5.8
Total SWL (h/sem)	150		

Module Evaluation

		Time/ Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	4	20% (20)	3, 6, 9, 12	LO #1, 2, 3,4 and 9
	Assignments	2	10% (10)	5, 10	LO #6, 7
	Projects / Lab.	-	-	-	-
	Report	1	10% (10)	13	LO #8
	Midterm Exam	2 hrs.	10% (10)	7	LO # 1-5

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

Delivery Plan (Weekly Syllabus)

	Material Covered
Week 1	**Vector and the geometry of space:** Three-Dimensional Coordinate Systems. Vector Algebra Operations. Unit Vectors. Midpoint of a Line Segment.
Week 2	The Dot Product. The angle between Vectors. The Cross Product.
Week 3	**Matrices:** Types of matrices. Elementary operations with matrices and vectors.
Week 4	Determinants. Linear equations. Row reduction method. Cramer's rule.
Week 5	Applications.
Week 6	**Limits and continuity:** Rates of Change and Limits. Calculating Limits Using the Limit Law.
Week 7	Infinite Limits and Vertical Asymptotes. Continuity. Tangents and Derivatives.
Week 8	**Differentiation:** Inverse Functions and Their Derivatives. Natural Logarithms. The Exponential and Logarithm Functions.
Week 9	Trigonometric Functions. Inverse Trigonometric Functions. Hyperbolic Functions. Inverse Hyperbolic Functions.
Week 10	Calculating Derivatives from the Definition. Differentiation Rules for (functions).
Week 11	Derivatives of Trigonometric Functions. The Chain Rule. Implicit Differentiation. Derivatives of Higher Order.
Week 12	**Applications of derivatives:** Extreme Values of Functions. Increasing and Decreasing Functions. Concavity and Curve Sketching.
Week 13	Applied Optimization Problems. L'Hôpital's Rule. The Mean Value Theorem. Motion along a Line: Displacement, Velocity, Speed, Acceleration.
Week 14	Related Rates Equations (application on Implicit Differentiation). Approximate calculation.
Week 15	**General Applications**
Week 16	**Preparatory week before the Final Exam**

Delivery Plan (Weekly Lab. Syllabus)

	Material Covered

Week 1	Exp. 1:
Week 2	Exp. 2:
Week 3	Exp. 3:
Week 4	Exp. 4:
Week 5	Exp. 5:
Week 6	Exp. 6:
Week 7	Exp. 7:

Learning and Teaching Resources		
	Text	**Available in the Library?**
Required Texts	George B. Thomas, Jr., Maurice D. Weir and Joel Hass, Thomas' calculus, 12th edition, Addison Wesley, 2010.	Yes
Recommended Texts	H.S. Gangwar, Prabhakar Gupta. A textbook engineering mathematics-I. Second edition, 2010.	No
Websites		

APPENDIX:

GRADING SCHEME				
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.

	Ministry of Higher Education and Scientific Research - Iraq University of Warith Al-Anbiyaa College of Engineering Aircraft Engineering Department	

MODULE DESCRIPTOR FORM

Module Information

Module Title	Engineering Mechanics		**Module Delivery**	
Module Type	CORE			**Theory** **Lab** **Tutorial**
Module Code	ENG123			
ECTS Credits	7			
SWL (hr/sem)	175			
Module Level	1	**Semester of Delivery**	2	
Administering Department	Aircraft Engineering	**College**	Engineering	
Module Leader	Mohammed Wahhab	**e-mail**	dr.mohammad.wahab@uokerbala.edu.iq	
Module Leader's Acad. Title	Prof	**Module Leader's Qualification**	PhD.	
Module Tutor		**e-mail**		
Peer Reviewer Name		**e-mail**		
Review Committee Approval	26/09/2024	**Version Number**	2024	

Relation With Other Modules

Prerequisite module	ENG113	**Semester**	1
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents

Module Aims	1. To assist students to understand the fundamental principles of engineering mechanics (Statics and Dynamics). 2. To develop problem solving skills and understanding of principles of Dynamics Kinematics of rigid bodies: through the application of techniques as they relate to the different fields of engineering. 3. To develop problem solving skills and understanding of Newton's law through the application of techniques. 4. To understand how analysis of Structures, Trusses, Frames, Machines, Centers of Mass and Centroids, and Area Moments of Inertia. 5. To comprehend how clarification of Mass Moments of Inertia and analysis in two dimensions' problems. 6. To understand the motion of bodies (kinematics), and the other subjects as it sequenced.
Module Learning Outcomes	1. Enable the student to learn and understand the basic Engineering Mechanics concepts, mass, forces, quantities and vectors at Mechanical Engineering 2. The student should understand and be able to apply Newton's Laws. 3. The student should Know the analysis of Structures, Trusses, Frames, Machines. 4. The student should be able to find the Centers of Mass and Centroids. 5. The student should know how can we find the Area Moments of Inertia, and the other subjects as it sequenced by the Course Materials and Schedule. 6. Understanding the basic principles of particles and solid body's motion 7. The ability to make a mathematical model of the motion of the mechanical systems. 8. Calculating the motion resulting from applying forces and moments, as well as calculating the forces and moments to describe the characteristics of motion. 9. The student should understand and be able to relate the kinematics of bodies to the solution of dynamics problems in impulse and momentum of particles. 10. The student should understand and be able to study the Absolute and relative acceleration 11. The student should understand and be able to apply Newton's Laws to particles to solve problems related to work and energy of

	particles.
Indicative Contents	Indicative content includes the following. Part A - Statics Structures: Plane Trusses, Method of Joints, Method of Sections, and Frames and Machines [9 hrs]. Centers of Mass and Centroids: Centroids of Lines, Centroids of Areas, Centroids of Volumes, and Composite Bodies and Figures [9 hrs]. Area Moments of Inertia: Rectangular Moments of Inertia, Polar Moments of Inertia, Composite Areas, Products of Inertia, and Rotation of Axes [5 hrs]. Part B - Dynamics Work and energy of particles: Work of a force, Kinetic energy of a particle, Principle of work and energy, and Potential energy [8 hrs]. Impulse and momentum of particles: Rate of changed of angular momentum. Conservation of angular momentum, Rate of changed of angular momentum. Conservation of angular momentum [8 hrs]. Impact: Central impact, Oblique Impact [8 hrs]. Kinematics of rigid bodies: Translation and Rotation of rigid bodies, General motion. Absolute and relative velocity in plane motion, Instantaneous center of rotation, and Absolute and relative acceleration [12 hrs]. Mass Moments of Inertia: Rectangular Mass Moments of Inertia, Polar Mass Moments of Inertia, and Composite Masses [8 hrs].
Learning and Teaching Strategies	
Strategies	Type something like: The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering type of simple experiments involving some sampling activities that are interesting

	to the students.

Student Workload (SWL)			
Structured SWL (h/sem)	108	**Structured SWL (h/w)**	7
Unstructured SWL (h/sem)	67	**Unstructured SWL (h/w)**	4.5
Total SWL (h/sem)	175		

Module Evaluation

		Time/ Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	4	20% (20)	3, 6, 9, 12	LO #1-11
	Assignments	2	10% (10)	5, 10	LO #1-11
	Projects / Lab.	Lab. 5	10% (10)	Continuous	LO #1, 3, 4, 5, 6, 8, 11
	Report	-	-	-	-
Summative assessment	**Midterm Exam**	2 hrs.	10% (10)	7	LO #1-11
	Final Exam	3 hrs.	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

	Material Covered
Week 1	**Structures:** Plane Trusses, Method of Joints and Method of Sections
Week 2	**Structures:** Frames and Machines
Week 3	**Centers of Mass and Centroids:** Centroids of Lines, Areas. and Volumes..
Week 4	**Centers of Mass and Centroids:** Centroids of Composite Bodies and Figures.
Week 5	**Area Moments of Inertia:** Rectangular Moments of Inertia. Polar Moments of Inertia. Composite Areas. Products of Inertia Rotation of Axes.
Week 6	**Work and energy of particles:** Work of a force.

	Kinetic energy of a particle.
Week 7	**Work and energy:** Principle of work and energy. Potential energy.
Week 8	**Impulse and momentum of particles:** Rate of changed of angular momentum.
Week 9	**Impulse and momentum of particles:** Conservation of angular momentum.
Week 10	**Impact:** Central impact.
Week 11	**Impact:** Oblique Impact.
Week 12	**Kinematics of rigid bodies:** Translation and Rotation of rigid bodies.
Week 13	**Absolute motion:** General motion. Absolute and relative velocity in plane motion. Instantaneous center of rotation.
Week 14	**Absolute motion:** Absolute and relative acceleration.
Week 15	**Mass Moments of Inertia:** Rectangular Mass Moments of Inertia. Polar Mass Moments of Inertia. Composite Masses.
Week 16	**Preparatory week before the Final Exam**

Delivery Plan (Weekly Lab. Syllabus)	
	Material Covered
Week 1	Exp. 1: ACHIEVING THE LAW OF CONSERVATION OF ENERGY (MAXWELL'S WHEEL)
Week 2	Exp. 2: EQUILIBRIUM FORCES IN THREE DIMENSIONS
Week 3	Exp. 3: DETERMINING THE CENTROID FOR DIFFERENT GEOMETRIC SHAPES
Week 4	Exp. 4: DETERMINING THE CENTER OF GRAVITY FOR DIFFERENT GEOMETRIC SHAPES
Week 5	Exp. 5: THE EXPERIMENTAL DETERMINATION OF THE MASS MOMENT OF INERTIA FOR SOLID AND HOLLOW DISKS
Week 6	Exp. 6:
Week 7	Exp. 7:

Learning and Teaching Resources		
	Text	**Available in the Library?**
Required Texts	ENGINEERING MECHANICS VOLUME 1 STATICS EIGHTH EDITION (2016) VOLUME 2 DYNAMICS EIGHTH EDITION (2015) Publisher: John Wiley & Sons Singapore Pte. Ltd By James L. Meriam (Author), L. G. Kraige (Author), J. N. Bolton (Author)	Yes
Recommended Texts	VECTOR MECHANICS FOR ENGINEERS: STATICS AND DYNAMICS Publisher : McGraw Hill; 12th edition (2018) by Ferdinand Beer (Author), E. Johnston (Author), David Mazurek (Author), Phillip Cornwell (Author), Brian Self (Author)	No
Websites		

APPENDIX:

GRADING SCHEME				
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.

	Ministry of Higher Education and Scientific Research - Iraq University of Warith Al-Anbiyaa College of Engineering Aircraft Engineering Department	

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information
معلومات المادة الدراسية

Module Title	WORKSHOPS I	**Module Delivery**	
Module Type	BASIC	☐ Theory ☐ Lecture ☐ Lab ☐ Tutorial ■ Practical ☐ Seminar	
Module Code	ENG106		
ECTS Credits	8		
SWL (hr/sem)	200		
Module Level	1	**Semester of Delivery**	2
Administering Department	Aircraft Engineering	**College**	Engineering
Module Leader	Ahmad Saddy Mohamad	**e-mail**	ahmad.saddy@uowa.edu.iq
Module Leader's Acad. Title	Assist. Prof.	**Module Leader's Qualification**	Ph.D.
Module Tutor	Aymen Hussien Salh	**e-mail**	aymen.hussien@uowa.edu.iq
Peer Reviewer Name		**e-mail**	
Review Committee Approval		**Version Number**	1

Relation with Other Modules
العلاقة مع المواد الدراسية الأخرى

Prerequisite module		**Semester**	
Co-requisites module		**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	1-Preparing applied engineers in the field of engineering sciences who are distinguished by a high level of knowledge and technological creativity, in line with the strict standards adopted globally in quality assurance and academic accreditation of the corresponding engineering programs, while adhering to the ethics of the engineering profession. 2. Enable the student to know and understand work systems, risks, and the factors surrounding them. 3. Enable the student to know and understand theoretical principles in handicrafts and measurements.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1- To familiarize the student with the vocabulary of occupational safety and its importance in the field of work. 2- Acquisition of the student's manual operation skills, for example (Filings and Tinsmith workshops), and mechanical operation skills, for example (Turning). 3- Acquisition of the student's mechanical forming skills, for example (Casting and Blacksmithing). 4- The student acquires basic engineering skills such as Welding, Carpentry, and Electrical installations that serve him in the professional field. 5- Enabling the student to operate the various machines and devices in mechanical operations and formation. 6- Cooperative learning by working collectively.
Indicative Contents المحتويات الإرشادية	1. Introducing the student to the basics of the art of turning and milling, types of cold working machines, the skill of dealing with them, choosing metals, operational tools, and methods of measurement and standardization 2. Introducing the student to the basics of the art of casting, hot forming, metal selection, method of working on casting furnaces and tools, and manufacturing casting molds 3. Familiarize students with the basics of cars and the systems they use, as well as maintenance, disassembly, and assembly processes. 4. Introducing students to the basics of household and industrial electrical appliances, the skill of using tools, and designing electrical circuits and control panels 5. Introducing the student to the basics of the art of plumbing, leveling surfaces, the skill of using tools, manufacturing and installing geometric shapes, and methods of measurement and standardization

	6. Introducing the student to the basics of the art of blacksmithing, cold and hot forming of metals, the method of hardening them, and the skills of dealing with hand tools, forming machines, and heating furnaces 7. Introducing the student to the basics of the art of filing and manual operation of metals with the help of manual, electrical, and mechanical tools, the skills of dealing with them, and the methods of measurement and standardization 8. Introducing the student to the basics of the art of welding, the installation and assembly of metals, the types of welding machines, the skills of dealing with them, the types of welding, and the methods of measurement and standardization Introducing the student to the basics of the art of carpentry and woodworking with the help of manual, electrical, and mechanical tools, the skills of dealing with them, and methods of measurement and standardization

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	

Student Workload (SWL)
الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	92	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	8	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

Module Evaluation
تقييم المادة الدراسية

		Time/ Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	5	5% (5)	Continuous	All
	Assignments	5	5% (5)	Continuous	All
	Projects / Lab.	5	25% (25)	Continuous	All
	Report	5	5% (5)	Continuous	All
Summative assessment	**Midterm Exam**	1 hr	10% (10)	7	All
	Final Exam	2 hr	50% (50)	16	All

Total assessment	100%		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Fitting workshop Occupational safety and its importance in filing workshops -An introduction to the basics of filing -Pen holder exercise “preparation and preparation”
Week 2	Fitting workshop Pencil holder exercises finishing and assembling.
Week 3	Fitting workshop -The catcher exercise. - Clamping exercise. Written exam in practical exercises.
Week 4	Carpentry workshop -Occupational safety and its importance in carpentry workshops. - An introduction to carpentry, its types, types of wood, tools used, and preparation Preparing the tools used Face modification exercise using the reindeer
Week 5	Carpentry workshop Garden fence work and how to connect its parts, the eight-star exercise
Week 6	Carpentry workshop - Wood smoothing exercise using smoothing paper - Wood dyeing exercise in three stages Final smoothing and varnishing exercise Written exam in practical exercises
Week 7	The tinsmith workshop Occupational safety and its importance in plumbing workshops An introduction to plumbing, its tools, and plumbing stages Planning and marking exercise on metal plates
Week 8	The tinsmith workshop Geometric shapes Types of individuals and methods of individuals Geometric shape individuals exercise on a metal board
Week 9	The tinsmith workshop Cone members exercise - Exercise of cylinders with an oblique cut Roll forming operations Connection without the use of an intermediary Written exam in practical exercises

Week 10	Electric Workshop Occupational Safety and its importance in electrical workshops An introduction to the basics of electrical installations - Linking a simple circuit consisting of a lamp to the control of a single-way switch. Connect two lamps in series with one-way switch control. Connecting two lamps in parallel with the control of a single road switch. Connect two lights with one-way dual switch control.
Week 11	Electric Workshop Connect a fluorescent lamp circuit to a one-way switch control Connecting an electric supply socket circuit to the control of a separate or combined one-way switch Written exam in practical exercises
Week 12	Electric Workshop Occupational Safety and its importance in blacksmithing workshops Introduction to the basics of Blacksmithing - Barbell adjustment exercise Eight-star exercise - Exercise forming the number eight in English Exercise forming the number six in English
Week 13	Supplementary training curriculum Welding workshop Plumbing workshop Blacksmith's workshop
Week 14	Supplementary training curriculum - Automotive workshop - Turning workshop Fitting workshop
Week 15	Supplementary training curriculum Carpentry workshop The plumbing workshop electric Workshop
Week 16	**Final Exam**

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

Week 6	
Week 7	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Workshop technology and measurements, Ahmed Salem Al-Sabbagh,	Yes
Recommended Texts		
Websites		

APPENDIX:

GRADING SCHEME مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
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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
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	Ministry of Higher Education and Scientific Research - Iraq University of Warith Al-Anbiyaa College of Engineering Aircraft Engineering Department	

MODULE DESCRIPTOR FORM

Module Information

Module Title	Electrical Engineering		**Module Delivery**	
Module Type	CORE			
Module Code	ENG125			
ECTS Credits	4			
SWL (hr/sem)	100			
Module Level	1		**Semester of Delivery**	2
Administering Department	Aircraft Engineering		**College**	Engineering
Module Leader	Ahmed Mohamed Merza		**e-mail**	ahmed.merza@uowa.edu.iq
Module Leader's Acad. Title	Assist. Lec.		**Module Leader's Qualification**	MSc.
Module Tutor	None		**e-mail**	None
Peer Reviewer Name			**e-mail**	
Review Committee Approval	26/09/2024		**Version Number**	2024

Theory
Lab

Relation With Other Modules

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

Module Aims, Learning Outcomes and Indicative Contents

Module Aims	1. To develop problem solving skills and understanding of circuit theory through the application of techniques. 2. To understand how 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 subject. 5. To understand Kirchhoff's current and voltage Laws problems. 6. To perform mesh and Nodal analysis.
Module Learning Outcomes	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	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 . [8hrs] AC circuits I – Time dependent signals, average and RMS values. Capacitance and inductance, energy storage elements, simple AC steady-state sinusoidal analysis. [8 hrs] AC Circuits II - Phasor diagrams, definition of complex impedance, AC circuit analysis with complex numbers. [6 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. [8 hrs] Revision problem classes [3 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. [8 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. [3 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 stabilisation, voltage reference, power supplies. [8 hrs]
Learning and Teaching Strategies	
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 type of simple experiments involving some sampling activities that are interesting to the students.

Student Workload (SWL)			
Structured SWL (h/sem)	48	**Structured SWL (h/w)**	3

Unstructured SWL (h/sem)	52	**Unstructured SWL (h/w)**	3.5
Total SWL (h/sem)	100		

Module Evaluation

		Time/ Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	4	20% (20)	3, 6, 9, 12	LO #1-11
	Assignments	2	10% (10)	5, 10	LO #1-11
	Projects / Lab.	Lab. 7	10% (10)	Continuous	LO #1, 2, 3, 6, 7, 8, 9, 10, 11
	Report	-	-	-	-
Summative assessment	**Midterm Exam**	2 hrs.	10% (10)	7	LO #1-11
	Final Exam	3 hrs.	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

	Material Covered
Week 1	Introduction to DC Circuits: Voltage, Current and Resistance. Ohm's Law. Kirchhoff's Laws. Voltage divider rule. Current divider rule. Current and Voltage Sources.
Week 2	Sources conversion. Series and Parallel Circuits. Star-delta and delta-star conversion. Methods of Analysis and Network Theorems: Branch-Current Analysis.
Week 3	Mesh Analysis. Nodal Analysis. Superposition Theorem. Thévenin's Theorem. Norton's Theorem.
Week 4	Maximum Power Transfer. Capacitors and Inductors: Capacitance and Capacitors
Week 5	Inductor and Inductance. Sinusoidal Alternating Waveforms:

	AC Voltage or Current Waveform General Format.
Week 6	Sinusoidal Waveform Format (period, Frequency, peak value and Phase Relations). Average Value and Effective (rms) Values. The Basic Elements (R, L, and C) response to a sinusoidal voltage or current.
Week 7	Magnetic Circuits: Magnetic Field, Flux and flux density. Reluctance and Magnetizing Force.
Week 8	Ohm's Law for Magnetic Circuits. Ampère's Circuital Law.
Week 9	AC Circuits Analysis: Series and Parallel AC Circuits. Power calculation (P, Q, and S).
Week 10	Power Triangle. Power-Factor. Polyphase Systems:
Week 11	Three-phase voltage generation. Generator-Loads connection in three phase systems (Y-Y,Δ-Δ,Y-Δ,Δ-Y). Phase and line voltage and current convertion between Y and Δ.
Week 12	Rotating Machines Principles: Elementary concepts of rotating machines. Direct –current machines. Synchronous machines.
Week 13	Induction machine. Stepper motor. Transformers: Construction and Working principle of transformer.
Week 14	E.M.F. equation of transformer. Voltage transformation ratio. Types of Transformers and Application
Week 15	**Power Electronic Circuits:** **Power electronic elements (dides, switching transistors , Capacitors and Inductor).** **Power electronic circuits (Rectifiers, inverters, converters).**
Week 16	**Preparatory week before the Final Exam**

Delivery Plan (Weekly Lab. Syllabus)

	Material Covered
Week 1	Exp. 1: Ohm's Law
Week 2	Exp. 2: Kirchhoff's Laws
Week 3	Exp. 3:Star-Delta and Delta-Star Circuit conversions
Week 4	Exp. 4:Superposition Theorem
Week 5	Exp. 5: Impedance Elements Characteristics

Week 6	Exp. 6: RLC Series Circuit
Week 7	Exp. 7:

Learning and Teaching Resources		
	Text	**Available in the Library?**
Required Texts	Robert L. Boylestad "Introductory Circuit Analysis" Eleventh Edition	Yes
Recommended Texts	John Hiley, Keith Brown and Ian Mckenzie Smith "Electrical And Electronic Technology" tenth edition	Yes
Websites		

APPENDIX:

GRADING SCHEME مخطط الدرجات				
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	Ministry of Higher Education and Scientific Research - Iraq University of Warith Al-Anbiyaa College of Engineering Aircraft Engineering Department	

MODULE DESCRIPTOR FORM

Module Information

Module Title	Eng. Drawing and Descriptive Geometry	**Module Delivery**	
Module Type	CORE		
Module Code	ENG124		
ECTS Credits	7		
SWL (hr/sem)	175		

Module Level	1	**Semester of Delivery**	2
Administering Department	**Aircraft Engineering**	**College**	**Engineering**
Module Leader	Ahmad Saddy Mohamad	**e-mail**	ahmad.saddy@uowa.edu.iq
Module Leader's Acad. Title	Assist. Prof	**Module Leader's Qualification**	PhD.
Module Tutor		**e-mail**	
Peer Reviewer Name		**e-mail**	
Review Committee Approval		**Version Number**	

Relation With Other Modules

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

Module Aims, Learning Outcomes and Indicative Contents

Module Aims	1. Training the student in the first stage the usage of Eng. drawing equipment. 2. Educate the student in the first stage the fundamental of mechanical drawing like Lettering, Applied geometry Pictorial drawing (Real model in true dimension), Orthographic projection, first & third angle projection, Dimensions, Sections, Third view estimate.
Module Learning Outcomes	1. Identify the components and basics of Engineering drawing. 2. Learn how to read the maps of mechanical engineering drawing. 3. Identify and knowing of all symbols and standers of Engineering drawing. 4. Identify the methods of engineering drawing and applied geometry. 5. Learn how to Pictorial drawing (Real model in true dimension) and Orthographic projection. 6. Identify all types of projection, First and third angle projection and Sections 7. The possibility of the student to draw the subject which explains to him. 8. Linking what his learning with reality. 9. Complete the drawing in specified time. 10. Student ability to learn and understand all the private belongings of mechanical drawing. 11. Develops student ability to using computers programs of drawing and conjugated with manual drawing.
Indicative Contents	****Engineering drawing:** Introduction. Standard drawing equipment. **Lettering:** Lines kinds in drawing. Kufi font in the writing of letters and numbers. The paper types and design with title table. Draw lines and circles. [10 hrs] ****Descriptive Geometry:** Introduction to descriptive geometry. Projection theory with standard planes. Methods of projection. Projection of a point. Exercise in projection of a point. [5 hrs] **Introduction to CAD Packages** [4.5 hrs] 1- Menus/ format/ Draw / Tools / Dimension / Modify 2- Tool bars 3-Drawing area 4-Command bar / Task bar 5-Drawing Grid / Snap Mode / Ortho Mode / Object Snap and Tutorials ****Engineering drawing:** **Engineering Processes:**

	Applied geometry in eng. drawing. Exercise in important eng. geometry (Drawing a perpendicular line to bisector, dividing a line, drawing a tangent to circle from point, Drawing an ellipse). [5 hrs] **Introduction to (ISO); Pictorial drawing:** Real model in true dimensions. Draw cube shape with ovals by used four centers method. Exercise in pictorial drawing. [7 hrs] ****Descriptive Geometry:** Projection of straight line. Exercise in projection of straight line. Exercise in projection of straight line by rotation method. The status of the straight line in space. [2 hrs] ** CAD** [5.5 hrs] Coordinate system (absolute and relative coordinate) Cartesian / Polar Coordinates and Tutorials Two Dimensional Drawing (Line , Circle , Rectangle , Arc , Polygon) Modify (Erase , Copy , Rotate , Mirror , Offset) and Tutorials ****Engineering drawing:** Exercises in Engineering Drawing (ISO). **Three Projections:** Three projections definition (front, top and side view). Draw in first angle. Exercises in projection. [14.5 hrs] ****Descriptive Geometry:** Projection of straight line. Exercise in projection of straight line. Exercise in projection of straight line by rotation method. The status of the straight line in space. [1.5 hrs] ** CAD** [3.5 hrs] Two Dimensional Drawing (Polyline , Helix , Donut , Ellipse) Modify (Trim , Join , Chamfer , Fillet) and Tutorials ****Engineering drawing:** **Dimensioning:** Main rules in dimensions position and details in drawing. Rules in dimensions position for arcs and circles. Exercise in applied dimensions on projection view. [6 hrs] **Sections** Sections definition. Find sections and section planes and half section projection. Exercise in half section projection. [8 hrs] ****Descriptive Geometry:**

	Definition and Description of the Auxiliary planes. Exercise in auxiliary planes. [3 hrs]. **CAD [2.5 hrs] Draw Hatch / Line type / Line width / Color and Tutorials Array (Rectangular and Polar) and Tutorials **Engineering drawing: **Third view estimate:** Important steps to estimate third unknown projection depending on the known two projections. Exercise in estimate third unknown projection. [15 hrs] **Descriptive Geometry: **Development of surface:** Introduction and describe development of surface. Exercise in projection triangular shape. Exercise in projection quadrilateral shape by rotation method. [2 hrs] **CAD [2 hrs] Dimensions and Tutorials
Learning and Teaching Strategies	
Strategies	-Give the student theoretical lectures prepared by the lecture and explain the subject of drawing in details and draw it in front of the students. -Get some samples of the subject of drawing to the class to conform the understanding and to know how it works. -Discuss some student's mistakes and how to avoid them

Student Workload (SWL)			
Structured SWL (h/sem)	78	**Structured SWL (h/w)**	5
Unstructured SWL (h/sem)	97	**Unstructured SWL (h/w)**	6.5
Total SWL (h/sem)	175		

Module Evaluation					
		Time/ Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
	Quizzes	2	10% (10)	5, 10	LO # 1-11

Formative assessment	**Assignments**	15	15% (15)	Continuous	LO # 1-11
	Projects / Lab.	Lab. 5	10% (10)	Continuous	LO # 1-11
	Report	5	5% (5)	Continuous	LO # 1-11
Summative assessment	**Midterm Exam**	2 hrs.	10% (10)	8	LO # 1-11
	Final Exam	3 hrs.	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)	
	Material Covered :
Week 1	****Engineering drawing:** Introduction. Standard drawing equipment. ****Descriptive Geometry:** Introduction to descriptive geometry.
Week 2	****Engineering drawing:** **Lettering:** Lines kinds in drawing. Kufi font in the writing of letters and numbers. The paper types and design with title table. ****Descriptive Geometry:** Projection theory with standard planes.
Week 3	****Engineering drawing:** Draw lines and circles. ****Descriptive Geometry:** Methods of projection. Projection of a point. Exercise in projection of a point.
Week 4	****Engineering drawing:** **Engineering Processes:** Applied geometry in eng. drawing. Exercise in important eng. geometry (Drawing a perpendicular line to bisector, Dividing a line, Drawing a tangent to circle from point, Drawing an ellipse). ****Descriptive Geometry:** Projection of straight line. Exercise in projection of straight line.
Week 5	****Engineering drawing:** **Introduction to (ISO); Pictorial drawing:** Real model in true dimensions. Draw cube shape with ovals by used four centers method. ****Descriptive Geometry:** Exercise in projection of straight line by rotation method.

Week 6	****Engineering drawing:** Exercise in pictorial drawing. ****Descriptive Geometry:** The status of the straight line in space.
Week 7	****Engineering drawing:** Exercises in Engineering Drawing (ISO).
Week 8	****Engineering drawing:** **Three Projections:** Three projections definition (front, top and side view).
Week 9	****Engineering drawing:** Draw in first angle. Exercises in projection.
Week 10	****Engineering drawing:** **Dimensioning:** Main rules in dimensions position and details in drawing. Rules in dimensions position for arcs and circles. Exercise in applied dimensions on projection view. ****Descriptive Geometry:** Definition and Description of the Auxiliary planes. Exercise in auxiliary planes.
Week 11	****Engineering drawing:** **Sections** Sections definition. Find sections and section planes and half section projection. ****Descriptive Geometry:** Exercise in auxiliary planes.
Week 12	****Engineering drawing:** Exercise in half section projection.
Week 13	****Engineering drawing:** **Third view estimate:** **(Part 1)** Important steps to estimate third unknown projection depending on the known two projections. ****Descriptive Geometry:** **Development of surface:** Introduction and describe development of surface. Exercise in projection quadrilateral shape by rotation method.
Week 14	****Engineering drawing:** **(Part 2)** Important steps to estimate third unknown projection depending on the known two projections. ****Descriptive Geometry:** Exercise in projection triangular shape.

Week 15	****Engineering drawing:** Exercise in estimate third unknown projection. ****Descriptive Geometry:** Exercise in projection quadrilateral shape by rotation method.
Week 16	**Preparatory week before the Final Exam**

Delivery Plan (Weekly Lab. Syllabus)

	Material Covered
Week 1	**Introduction to CAD packages** 1- Menus/ format/ Draw / Tools / Dimension / Modify 2- Tool bars
Week 2	**Drawing area** 1- Command bar / Task bar 2- Drawing Grid / Snap Mode / Ortho Mode / Object Snap and Tutorials
Week 3	**Coordinate system** 1- Absolute and relative Coordinate 2- Cartesian and Polar coordinates
Week 4	**Two dimensional drawing** 1- (Line , Circle , Rectangle , Arc , Polygon) 2- Modify (Erase , Copy , Rotate , Mirror , Offset) and Tutorials
Week 5	1 -Two Dimensional Drawing (Polyline , Helix , Donut , Ellipse) 2- Modify (Trim , Join , Chamfer , Fillet) and Tutorials
Week 6	1- Draw Hatch / Line type / Line width / Color and Tutorials 2- Array (Rectangular and Polar) and Tutorials
Week 7	**Dimensions and Tutorials**

Learning and Teaching Resources

	Text	Available in the Library?
Required Texts	1- K. Venkata Reddy, "Text book of Engineering Drawing", BS Publications, 2008. 2- 1986 , كتاب الرسم الهندسي ,عبد الرسول الخفاف 3- الهندسة الوصفية ، د. يوسف نيقولا،	Yes
Recommended Texts		
Websites	https://me.uotechnology.edu.iq/index.php/ar/	

APPENDIX:

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	F – Fail	راسب	(0-44)	Considerable amount of work required
Note:				

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	Ministry of Higher Education and Scientific Research - Iraq University of Warith Al-Anbiyaa College of Engineering Aircraft Engineering Department	

MODULE DESCRIPTOR FORM

Module Information

Module Title	Mathematics II		**Module Delivery**	
Module Type	CORE			
Module Code	ENG122		**Theory**	
ECTS Credits	6			
SWL (hr/sem)	150			
Module Level	1	**Semester of Delivery**	2	
Administering Department	Aircraft Engineering	**College**	Engineering	
Module Leader	Aws Akram	**e-mail**	aws@uowa.edu.iq	
Module Leader's Acad. Title	Assist. Prof	**Module Leader's Qualification**	PhD.	
Module Tutor		**e-mail**		
Peer Reviewer Name		**e-mail**		
Review Committee Approval	26/09/2024	**Version Number**	2024	

Relation With Other Modules

Prerequisite module	ENG112	**Semester**	1
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents

Module Aims	1. To provide a course of high academic quality in Mathematics in a challenging and supportive learning environment that encourages students to reach their full potential, personally and academically. 2. To provide a course that is suitable both for students aiming to pursue research and for students going into other careers. 3. To provide an integrated system of teaching which can be tailored to the needs of individual students. 4. To develop in students the capacity for learning and clear logical thinking. 5. To continue to attract and select students of outstanding quality. 6. To provide an intellectually stimulating environment in which students have the opportunity to develop their skills and enthusiasm to their full potential.
Module Learning Outcomes	Knowledge and Understanding: This Course will develop learners' ability to: 1. Understand and use mathematical concepts and relationships 2. Select and apply operational skills in algebra, geometry, trigonometry and statistics within mathematical contexts 3. Select and apply skills in numeracy 4. Use mathematical models 5. Use mathematical reasoning skills to interpret information, select a strategy to solve a problem, and communicate solutions. Subject-specific skills: It is expected that learners will develop the following: 6. Broad, generic skills through this Course. 7. Skills for Learning, and drawn from the main skills areas listed below. 8. Skills for Life 9. and Skills for Work These must be built into the Course where there are appropriate opportunities.
Indicative Contents	Indicative content includes the following. **Integration:** Definite integration, basic integration formulas, integration by parts, trigonometric functions integrals, odd and even powers of sine and cosine, trigonometric functions substitutions, completing the square method, integration of rational functions by partial fractions. [34 hrs] **Applications of definite integrals:** The area under the graph of nonnegative functions, mean value theorem for definite integrals, definite integral, polar coordinates, double integral, distance, velocity and acceleration, volumes by slicing and rotation about an axis, volumes by cylindrical shells, lengths of plane curves, areas of surfaces

	of revolution. [25 hrs] **Complex numbers:** Algebra of complex numbers, Argand diagrams, Euler's formula, De Moivre's theorem. Roots. [12 hrs] **Curve fitting:** Simple linear regression, Polynomial regression. [12 hrs] **General Applications** [4 hrs]
Learning and Teaching Strategies	
Strategies	All lectures reflect the higher values, purposes and principles. They offer flexibility, provide more time for learning, focus on skills and applying to learn, and scope for personalization and choice. In this Course, and its component Units, there will be an emphasis on skills development and the application of those skills. Assessment approaches will be proportionate, fit for purpose and will promote best practices, enabling learners to achieve the highest standards they can. This course provides learners with opportunities to continue to acquire and develop the attributes and capabilities of the four capacities, as well as skills for learning, skills for life and skills for work.

Student Workload (SWL)

Structured SWL (h/sem)	63	**Structured SWL (h/w)**	4
Unstructured SWL (h/sem)	87	**Unstructured SWL (h/w)**	5.8
Total SWL (h/sem)	150		

Module Evaluation

		Time/ Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	4	20% (20)	3, 6, 9, 12	LO #1, 2, 3,4 and 9
	Assignments	2	10% (10)	5, 10	LO #6, 7
	Projects / Lab.	-	-	-	-
	Report	1	10% (10)	13	LO #8
Summative assessment	**Midterm Exam**	2 hrs.	10% (10)	7	LO # 1-5
	Final Exam	3 hrs.	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

	Material Covered
Week 1	**Integration:** Definite integration. Basic integration formulas.
Week 2	**Methods of Integration:** Integration by parts.
Week 3	Trigonometric functions integrals.
Week 4	Odd and even powers of sine and cosine.
Week 5	Completing the square method.
Week 6	Partial fractions.
Week 7	**Applications of definite integrals:** The area under the graph of nonnegative functions. Mean value theorem for definite integrals. Definite integral. Double integral.
Week 8	Distance, velocity and acceleration. Volumes by slicing and rotation about an axis.
Week 9	Volumes by cylindrical shells. Lengths of plane curves. Areas of surfaces of revolution.
Week 10	**Polar coordinates**
Week 11	**Complex numbers:** Algebra of complex numbers. Argand diagrams. Euler's formula.
Week 12	De Moivre's theorem. Roots.
Week 13	**Curve fitting:** Simple linear regression.
Week 14	Polynomial regression.
Week 15	**General Applications**
Week 16	**Preparatory week before the Final Exam**

Delivery Plan (Weekly Lab. Syllabus)

	Material Covered
Week 1	Exp. 1:
Week 2	Exp. 2:
Week 3	Exp. 3:
Week 4	Exp. 4:
Week 5	Exp. 5:
Week 6	Exp. 6:
Week 7	Exp. 7:

Learning and Teaching Resources		
	Text	**Available in the Library?**
Required Texts	George B. Thomas, Jr., Maurice D. Weir and Joel Hass, Thomas' calculus, 12th edition, Addison Wesley, 2010.	Yes
Recommended Texts	H.S. Gangwar, Prabhakar Gupta. A textbook engineering mathematics-I. Second edition, 2010.	No
Websites		

APPENDIX:

GRADING SCHEME				
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:

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	Ministry of Higher Education and Scientific Research - Iraq University of Warith Al-Anbiyaa College of Engineering Aircraft Engineering Department	

MODULE DESCRIPTION FORM

Module Information

Module Title	English Language	**Module Delivery**	
Module Type	Basic		
Module Code	UOW107		
ECTS Credits	2	**Theory**	
SWL (hr/sem)	50		

Module Level	1	**Semester of Delivery**	2
Administering Department	Aircraft Engineering	**College**	Engineering
Module Leader	Alaa Akram Jawad	**e-mail**	alaa.ak@uowa.edu.iq
Module Leader's Acad. Title	Assist. Lecturer	**Module Leader's Qualification**	MSc
Module Tutor		**e-mail**	
Peer Reviewer Name		**e-mail**	
Scientific Committee Approval Date	26/09/2024	**Version Number**	2024

Relation with other Modules

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

Module Aims, Learning Outcomes and Indicative Contents

Module Aims	

	Nowadays English has a special and predominant role in the communicative sphere of the world. It has also a special identity in the field of education. The teaching of English is highly desirable for the English teacher. Before starting his/her teaching, it requires from the teacher to determine his/her aims and objectives. This module aims to enhance the communication skills of students whose level of English is equivalent to pre-intermediate level. There will be a particular focus on the development of the four language skills (speaking, listening, reading and writing) and on broadening students' vocabulary and syntactical range so that they can communicate easily on a wide range of topics.
Module Learning Outcomes	This semester will help students through enhancing their Knowledge and Understanding and enabling them to use grammar correctly, analyze the element of language and establish the appropriate relationship among linguistic components, in addition to understanding the meaning of sentences and paragraphs. So the learning outcomes will be: 1. The course covers core language and skills students need to communicate successfully in technical specializations, 2.give their opinions and participate in discussions on a wide range of topical issues, 3. communicate effectively in written format on a range of contemporary topics, especially the technical ones, 4. understand the key points of a range of moderately complex oral and written texts with relative ease, 5. communicate effectively as part of a multicultural group, 6. manage, interpret and create meaning using a variety of digital devices and tools
Indicative Contents	**A- Communicative competences** **Listening** - Understand and identify the main points of dialogues of 230-250 words on familiar topics regularly encountered in life, work, school, etc., within the scope of the curriculum. - Listen and guess meanings (through the expressions and feelings of the speakers) in familiar monologues and conversations in everyday life - Understand the main points of news programs, broadcasts, interviews, etc., on familiar topics which are clearly delivered in simple language, or with illustrative images. [3 Hrs.] **Speaking** - Pronounce clearly and relatively accurately short dialogues. - Speak and interact with fellow speakers about familiar topics, express personal views and exchange information about the topics covered in the curriculum. - Describe in simple discourse familiar topics, narrate a short story closely related to the topics covered. - Present preparedly the projects on the topics in the curriculum. [2 Hrs.] **Reading** - Read and comprehend the main points, specific contents of a text of 200 words on current and familiar topics. - Read and understand the argument flow of texts, identify main conclusions in texts using clear language. - Read to find and summarize short texts of everyday use such as simple letters, brochures, using words and structures from the original texts. [3 Hrs.] **Writing** – write paragraphs (block and indented styles), Write simple connected and coherent texts of 180-200 words; write short reports based on

	suggestions, providing factual information and reasons for the recommendations made in the reports; collect short information from several sources and summarize it. - Complete (write/fill) administrative forms such as CVs and resumes, letter of application for employment, emails, etc. - Write descriptive texts of simple charts and tables. [3 Hrs.] **B- Linguistic knowledge** **Pronunciation**: Vowel and consonant syllable, words with different syllables, Words with stress (specials cases) – Words without stress, Sentence stress, assimilation, linking vowels with vowels Question, intonation, Homophones, practicing words and terms, phrases, and sentences related to the students' major. [3 Hrs.] **Vocabulary**: Words related to themes and topics of the course, collocations, words with different meanings and pronunciations. [2 Hrs.] **Grammar**: parts of speech, past, Present, and future tenses, Word structure (compound nouns), Countable and uncountable nouns. Types on sentences: simple, compound, complex sentences, Articles, language function: commands, requests, offers, advice and instructions. Modal verbs, Relative pronouns and Relative clauses with which-that-who-whom-whose-where-when. Prepositions, Phrasal verbs (including verbs, adverbs and prepositions), comparison showing changing things, Sentences of reason and results and Conjunctions: although, however etc, active and passive, Adverbial clauses of condition, Comparatives and superlatives of adjectives. [2 Hrs.]

Learning and Teaching Strategies	
Strategies	The teacher should prepare his/her students for listening to academic lectures and academic reading to some extent. In addition to that , students should participate in the lecture through the skills of speaking , writing , reading and listening. **Students are taught by Communicative language teaching (CLT)** in which students are encouraged to communicate with each other in the target language. students need to be exposed to the target language as much as possible to understand and use the target language in real-life situations. A variety of ways will be used to teach students Technical English. For example, work in group, practicing different activities, discussion, presentation to get students to communicate with each other in the target language and to practice using the target language for communication, using pictures, images, and spatial understanding (Visual learning) and Aural (auditory-musical) by using sound and music, and Verbal (linguistic) via using words, both in speech and writing. students need to be confident in their ability to use the target language and develop better interpersonal skills.

Student Workload (SWL)			
Structured SWL (h/sem)	33	**Structured SWL (h/w)**	2

Unstructured SWL (h/sem)	17	**Unstructured SWL (h/w)**	1.2
Total SWL (h/sem)	50		

Module Evaluation

		Time/ Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	4	20% (20)	3, 6, 9, 12	LO #1 - 6
	Assignments	2	10% (10)	5, 10	LO #1 - 6
	Projects / Lab.	-	-	-	-
	Report	1	10% (10)	13	LO #1 - 6
Summative assessment	**Midterm Exam**	2 hrs.	10% (10)	7	LO #1 - 6
	Final Exam	3 hrs.	50 % (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

	Material Covered
Week 1	Parts of Speech(Nouns-Verbs-Adjectives-Adverbs-Prepositions-Articles-Pronouns-Conjunctions-Interjections), Unit One of the Book (Headway)
Week 2	The components, Structure and kinds of the sentences, Unit Two (Headway) 1-Simple-compound –complex 2-declarative- interrogative –exclamatory – conditional -imperative
Week 3	Tenses - present tenses, Definite and Indefinite Articles, ways of joining sentences
Week 4	Tenses – Past tenses , reading comprehension, Unit Three (Headway)
Week 5	Tenses- future tenses, writing basics and strategies.
Week 6	Passive and active sentence in scientific writing, Unit Four (Headway)
Week 7	Listening skills- How to participate in different topics- how to avoid silence, How to answer the questions of the passage in exam (WH Questions), listening and speaking skills (multiple native conversations).
Week 8	Writing Skills (Punctuation – ways to join sentences- principles of paragraph structure- practice writing), Unit Five (Headway)
Week 9	Mid-term Exam .
Week 10	Idioms and idiomatic expression, Unit Six (Headway)

Week 11	Reading skills (skimming, scanning, and intensive reading), Unit Seven + Unit Eight (Headway)
Week 12	Phrasal verbs , speaking skills(participating in a dialogue and turn taking)
Week 13	Conditional in English, speaking skills (how to make presentation)
Week 14	Comparison and modals, participating in group discussion and be active listener/speaker
Week 15	Writing skills (CV, cover letter, and email writing)
Week 16	Preparatory week before the Final Exam

Learning and Teaching Resources

	Text	Available in the Library?
Required Texts	1- New Headway, English Course, (beginner), John and Liz Soars and Mike Sayer, Oxford University Press. 2- Selected ESP materials.	Yes
Recommended Texts	Murphy, R. (1985). Grammar in Use, Rapid Review of Grammar, Infotech: English for Computer Users. (4th edition). Cambridge.	No
Websites	Randall's ESL Cyber Listening Lab - English Listening	

APPENDIX:

Grading Scheme

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

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