وزارة التعليم العالي والبحث العلمي
جهاز الإشراف والتقويم العلمي
إدارة ضمان الجودة والاعتماد الأكاديمي

وصف البرامج الأكاديمية
جامعة الحلة
كلية التقنيات الهندسية
قسم هندسة تقنيات الأمن السيبراني

2026-2025

اسم الجامعة: جامعة الحلة

الكلية/ المعهد: كلية التقنيات الهندسية

القسم العلمي: هندسة تقنيات الأمن السيبراني

اسم البرنامج الأكاديمي او المهني: بكالوريوس هندسة تقنيات الأمن السيبراني

اسم الشهادة النهائية: بكالوريوس في هندسة تقنيات الأمن السيبراني

النظام الدراسي: مسار بولونيا

تاريخ اعداد الوصف : ٢٠٢٥/٠٩/٠١

تاريخ ملء الملف : ٢٠٢٦/٠٣/٢٦

رئيس القسم

م.د حيدر كريم مظهر

مصادقة السيد العميد

أ . د . هارون عبد الكاظم

المرحلة الأولى

UGI

MODULE DESCRIPTION FORM

نموذج وصف مادة الرياضيات ١

Module Information معلومات المادة الدراسية					
Module Title	**Mathematics I**			**Module Delivery**	
Module Type	**Support or related learning activity**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CSTE1104**				
ECTS Credits	**5**				
SWL (hr/sem)	**125**				
Module Level	1		**Semester of Delivery**	1	
Administering Department	CSTE		**College**	EETC	
Module Leader	Asmaa Aqeel Hadi		**e-mail**	asmaa_aqeel_hadi@hilla-unc.edu.iq	
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**	MS.C	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date			**Version Number**	1.0	

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	1. This course deals with differential and integral calculus. 2. To develop problem solving skills and understanding of preliminaries to differential calculus. 1. To understand differentiation, and differentiation methods. 2. To perform applications using the derivative. 3. To get a good grasp of Integrals, and Integration methods. 4. To understand the relationship between differentiation and integration.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Recognize Line and Circle Equation and related evaluating formulas. 2. List the various terms associated with Functions and their Types. 3. Discuss the Limit and Continuity of a Function. 4. Describe the Definition of a derivative as a limit, Differentiation Rules, and various types of Function's Derivatives. 5. Identify when to use different Differentiation Methods. 6. Discuss the Curve Sketching process, and the L'Hospital's Rule. 7. Analyze Taylor and Maclaurin Series. 8. Identify the Indefinite Integrals. 9. Explain the Integration Methods u-substitution, By parts. 10. Explain the Integration Methods Involving Trigonometric Functions, Trigonometric substitution. 11. Explain the Integration Method Rational Functions by Partial Fractions. 12. Explain the Integration Methods Functions Involving Roots, and Functions Involving Quadratics. 13. Recognize the Definite Integral and its Application Area Under a Curve. 14. Discuss e the Definite Integral Applications Arc Length, Average Value of a Function.

	15. Discuss the Definite Integral Applications Areas Between Two Curves.
Indicative Contents المحتويات الإرشادية	<u>Part A - Preliminaries to differential calculus.</u> This part includes the Line and Circle Equation and related evaluating formulas and parameters. Furthermore, main mathematical Functions characteristics Domain, Range, Odd, Even, and their Types. Finally, The Limit and Continuity of a Function Laws, the behavior At Infinity, followed by important Special Limits, then the Continuity Conditions. [9 hrs] + Revision problem classes in weekly tutorials [3 hrs] <u>Part B – Differential calculus.</u> This part will take in details the first key subject of the semester, the Differentiation process from the prospective of Definition as limit, Differentiation Rules, and Function-Derivative Table. Which will be followed by Differentiation Methods namely the Implicit, Logarithmic, and The Chain Rule. Furthermore, four Applications of differentiation will be discussed the Curve Sketching, L'Hospital's Rule, and Taylor and Maclaurin Series. [12 hrs] + Revision problem classes in weekly tutorials [4 hrs] <u>Part C – Integral calculus.</u> This part discusses the second key subject the Integration of functions. Followed by dissecting the main Integration Methods, u-substitution, By parts, Involving Trigonometric Functions, Trigonometric substitution, Rational Functions by Partial Fractions, Functions Involving Roots, and Functions Involving Quadratics. Furthermore, it will consider six definite Integral applications, namely The Area Under a Curve, Arc Length, Average Value of a Function, and Areas Between two Curves. [22 hrs] + Revision problem classes in weekly tutorials [8 hrs]

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

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	62	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	20% (20)	5, 10	LO #1 - 4, 5 – 9
	Assignments	2	15% (15)	7, 14	LO # 1 - 6, 7 and 13
	Projects / Lab.	N/A			
	Report	1	5%(5)	14	LO #13, 14 and 15
Summative assessment	**Midterm Exam**	2hr	10% (10)	8	LO # 1-7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	**Line and Circle Equation.**
Week 2	**Functions (**Domain, Range, Odd, Even, Types.**)**
Week 3	**The Limit and Continuity of a Function (**Laws, At Infinity, Special Limits, Continuity Conditions.**)**
Week 4	**Differentiation (**Definition as limit, Differentiation Rules, Function-Derivative Table.**)**
Week 5	**Differentiation Methods (**Implicit, Logarithmic, The Chain Rule**.)**
Week 6	**Applications of Differentiation (**Curve Sketching, L'Hospital's Rule.**)**
Week 7	**Applications of Differentiation (**Taylor and Maclaurin Series.**)**
Week 8	**Midterm Exam + Introduction to Indefinite Integrals.**
Week 9	**Integration Methods (**u-substitution, By parts.**)**
Week 10	**Integration Methods (**Involving Trigonometric Functions, Trigonometric substitution.**)**
Week 11	**Integration Methods (**Integration of Rational Functions by Partial Fractions.**)**
Week 12	**Integration Methods (**Functions Involving Roots**,** Functions Involving Quadratics.**)**
Week 13	**Definite Integral and Applications (**Definite Integral, Area Under a Curve, Arc Length, Average Value of a Function.**)**
Week 14	**Definite Integral and Applications (Areas Between two Curves)**
Week 15	**Preparatory week before the final Exam**

Delivery Plan (Weekly Tutorial) المنهاج الاسبوعي الاضافي	
	Material Covered

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

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Joel R. Hass, Christopher E. Heil, Maurice D. Weir, "Thomas' Calculus: Early Transcendentals", Pearson Education, 14th Edition, (January 1, 2017), ISBN-13: 978-0134439020.	Yes
Recommended Texts	Anthony Croft, Robert Davison, "Mathematics for Engineers: A Modern Interactive Approach", Prentice Hall, 3rd edition, (January 1, 2008), ISBN-13: 978-0132051569.	No
Websites	https://www.khanacademy.org/math/differential-calculus	

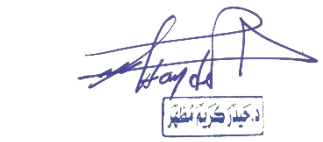
Grading Scheme

مخطط الدرجات

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

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

آستاذ المادة	رئيس القسم	العميد
م.م. أسماء عقيل هادي	م.د. حيدر كريم مظهر	أ . د . هارون عبد الكاظم شهد



MODULE DESCRIPTION FORM

نموذج وصف مادة مقدمة إلى نظم المعلومات

Module Information معلومات المادة الدراسية					
Module Title	**Introduction to Information System**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CSTE1102**				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level	1		**Semester of Delivery**	1	
Administering Department	CSTE		**College**	EETC	
Module Leader	Baseem Adnan N. Altwajre		**e-mail**	baseem.adnan@hilla-unc.edu.iq	
Module Leader's Acad. Title	Assistant lecturer		**Module Leader's Qualification**	MSc	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date			**Version Number**	1.0	

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	The purpose of this course is to provide computer literacy to the student. The course prepares the student for a successful working relationship with computerized systems. It will present to him/her what the computer is, what it can and cannot do, how it operates, how it is programmed, how it is used as a tool in decision-making, and the social implementations of computer usage. Students should be acquainted with handling and managing data and information in business organizations. They should also understand the meaning of "Information Systems and technology and their effects on organizations, the different business information systems, and the development life cycle. Students must learn about Computer Hardware and Software and various types of computer networks. Students should know how to deal with e-commerce.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	As a result of taking this course, the student should be able to: 1. Know and understand various principles and fundamentals of Information Systems and Information Technology. 2. Analyze the types and functions of computers and the components of a computer system. 3. Define and categorize application and system software and use general-purpose application packages. 4. List the various network communication technologies and network components. 5. Understand the basics of network security. 6. Explain the Internet, Intranets, and Extranets systems. 7. Understand the basic concepts of database systems and data warehousing. 8. Explain the importance of E-Commerce. 9. Understand the GIS and MIS systems. 10. Describe the system and program development lifecycles. 11. Demonstrate data privacy and security.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. The Information Age in Which You Live (Types of Information systems, Competitive advantages) Computer Hardware (Input devices, Output devices, Storage devices, Categories of computers) Computer Software (System software, Application software) Network components, Network classification, Network communications media, Network security, The client/server software model

	Database and Data Warehouse (The relational database model, database management system tools, data warehouse, and data mining) E-commerce business models, understand your business & products & services & customers and move money easily and securely. Management Information and Decision Support Systems (MIS, DSS: definitions, inputs, and outputs) System development life cycle, Component-based development, End-user development, prototyping Protecting People and Information (Ethics, Privacy, Security)

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Type something like: The main strategy that will be adopted in delivering this module is to encourage student's 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 the type of simple experiments involving some interesting sampling activities for the students.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	79	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	71	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	5
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation تقييم المادة الدراسية				
	Time/Nu	**Weight (Marks)**	**Week Due**	**Relevant Learning**

		mber			Outcome
Formative assessment	Quizzes	2	10% (10)	5, 10	LO #1, 2, 3, 7, 8 and 9
	Assignments	2	10% (10)	2, 12	LO # 4, 5, and 7
	Projects / Lab.	5	15% (15)	Continuous	
	Report	1	5% (5)	13	LO # 8, 9 and 10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO # 1-6
	Final Exam	4hr	50% (40 + 10)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Information Systems: An Overview
Week 2	Computer Hardware
Week 3	Computer Software
Week 4	Network Basics
Week 5	Network Security
Week 6	Internet, Intranet, and Extranet
Week 7	Mid Term Exam + Database Systems
Week 8	Data Warehousing
Week 9	E-Commerce
Week 10	Global Information Systems
Week 11	Management Information System
Week 12	System Development Life Cycle
Week 13	Data privacy, security, and Ethics
Week 14	Emerging Trends, Technologies, Applications
Week 15	Preparing for final exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Lab 1: Computer Hardware Components

Week 2	Lab 2: Microsoft Windows
Week 3	Lab 3: Internet, Web, Email
Week 4	Lab 4: Computer Network Components
Week 5	Lab 5: Microsoft Word
Week 6	Lab 6: Microsoft PowerPoint
Week 7	Lab 7: Microsoft Excel

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Shelly B. Gary, Vermaat E. Misty. Discovering Computers: Fundamentals. Shelly Cashman Series, Course Technology, latest edition.	No
Recommended Texts	Using Information Technology 10th Edition. 2013, by Brian K. Williams & Stacey C. Sawyer, McGraw-Hill	No
Websites	Cisco Networking Academy, Get Connected Course, Computer Hardware Basics, Computer Software basics	

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

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

العميد

أ . د . هارون عبد الكاظم شهد

رئيس القسم

م.د. حيدر كريم مظهر

أستاذ المادة

م.م. بسيم عدنان ناظم

MODULE DESCRIPTION FORM

نموذج وصف مادة أسس البرمجة

Module Information معلومات المادة الدراسية					
Module Title	**Programming Essentials**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CSTE1104**				
ECTS Credits	6				
SWL (hr/sem)	150				
Module Level		1	**Semester of Delivery**		1
Administering Department		CSTE	**College**	EETC	
Module Leader	Hayder Kareem		**e-mail**		
Module Leader's Acad. Title		Lecturer	**Module Leader's Qualification**		Ph.D.
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date			**Version Number**		1.0

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	1. To develop problem solving skills and understanding of programming principles. 2. To understand the logic behind programming. 3. This course include using C++ as a programming language. 4. This course include algorithm design. 5. To understand how a programmer should prepare his work and think logically. 6. To perform programming project using control statements, functions, and to deal with the data stored in an array or file.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	7. Use of algorithms (Flowchart specifically). 8. Explain how the program is written using C++ Programming language. 9. Define and use of variables (Data types, Declaration of variables). 10. Use of operators and its precedence (Assignment, Arithmetic operators, Relational and Logical operators, Bitwise Operators, Increment and decrement, Cast operator, and Conditional operator). 11. Making Decisions (use of: if, if-else, and switch statements) and draw of Flowchart of if-else statement. 12. Use of Loops (for, while, do-while), and use of break and continue statements with loops, and draw of Flowchart of loops. 13. Use of Arrays (one and two dimensional). 14. Use of Functions (Built-in function functions (Library functions), and User-Defined functions). 15. Use of arguments passed by value and by reference, and use of Local and global variables. 16. Use of Character sequences and string handling. 17. Handling and processing text files in C++.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. - Introduction to computers and programming. Types of programs (Applications and Systems). Programming languages (Machine, Assembly, and High-level language). Introduction to Compilers, Interpreters, object file, and executable file. Introduction to C++ with a simple program implementation. Types of programming errors, Program development life cycle, Algorithms - Flowchart - . Header files, Standard Input/output instructions, Comments in C++. [15 hrs] - Variables, Data Types, Declaration of variables, Constants, Statements. Operators (Assignment, Arithmetic operators, Relational and Logical operators, Bitwise Operators, Increment and decrement, Cast operator, and Conditional operator), Precedence of operators. [8 hrs]

	- Making Decisions (if, if-else statements), Flowchart of if-else statement. Making Decisions (switch statement), using break statement with switch statement, Flowchart of switch statement. Loops (for, while, do-while), using break and continue statements with loops, Flowchart of loops. [15 hrs] - Arrays (One dimensional and Two Dimensional) [10 hrs] - Functions (Built-in function functions (Library functions), and User-Defined functions), Function prototype (Declaration), Function call, Passing arguments to a function, return statement, Value-Returning vs. Void (Non Value Returning) functions, Function with no argument and no return value, Function with no argument but return value, Function with argument but no return value, Function with argument and return value. Arguments passed by value and by reference, Recursion, Local and global variables. [20 hrs] - Character sequences and string handling, ASCII table. [10 hrs] - Handling and processing text files in C++ [10 hrs]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted in delivering this module is to encourage students' participation in learning and developing their skills in programming and logic thinking, 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 lab experiments involving assignments and project design activities that are interesting to the students.

Student Workload (SWL) الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	79	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	71	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	5
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	10% (10)	6, 11	LO #3 to 6 and #7 to 9
	Assignments	2	10% (10)	5, 10	LO #3 to 6 and #7 to 9
	Projects / Lab.	10	15% (15)	Continuous	
	Report	1	5% (5)	13	LO #10, 11
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	LO # 1 to 7
	Final Exam	4hr	50% (40 + 10)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الأسبوعي النظري

	Material Covered
Week 1	Introduction. Types of programs (Applications and Systems). Computer Components. How computers store Data.
Week 2	Programming languages (Machine, Assembly, and High-level language). Introduction to Compilers, Interpreters, object file, and executable file. Types of programming errors, program development life cycle.
Week 3	Algorithms (Flowchart).
Week 4	Variables, Data Types, Declaration of variables, Constants, Statements, and Operators.
Week 5	Making Decisions (if, if-else statements), flowchart of if-else statement.
Week 6	Making Decisions (switch statement), using break statement with switch statement, flowchart of switch statement.
Week 7	Mid-term Exam + Loops (for loop)
Week 8	Loops (while, do-while), using break and continue statements with loops, flowchart of loops.
Week 9	Arrays (One dimensional)

Week 10	Arrays (Two Dimensional)
Week 11	Functions: Built-in function functions (Library functions), and User-Defined functions), Function prototype (Declaration), function call, Passing arguments to a function, return statement, Local and global variables.
Week 12	Functions (Value-Returning) vs. Void (Non Value Returning) functions, function with no argument and no return value, function with no argument but return value, function with argument but no return value, function with argument and return value. Arguments passed by value and by reference.
Week 13	Character sequences and string handling.
Week 14	Handling and processing text files in C++
Week 15	**Preparing for the final Exam**

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الأسبوعي للمختبر

	Material Covered
Week 1	Lab 1: Introduction to C++ with a simple program implementation. Header files, Standard Input/output instructions, Comments in C++.
Week 2	Lab 2: Variables, Arithmetic operators, Increment and decrement
Week 3	Lab 3: Relational and Logical operators, Bitwise Operators
Week 4	Lab 4: Cast operator, Conditional operator, Precedence of operators.
Week 5	Lab 5: Making Decisions (if, if-else).
Week 6	Lab 6: Making Decisions (switch statements).
Week 7	Lab 7: Loops (for)
Week 8	Lab 8: Loops (while, and do-while)
Week 9	Lab 9: Arrays (1D)
Week 10	Lab 10: Arrays (2D)
Week 11	Lab 11: Functions
Week 12	Lab 12: Function types according to whether it take arguments and/or return a value or not.
Week 13	Lab 13: Character sequences and string handling.
Week 14	Lab 14: Text files

Learning and Teaching Resources

مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	1. Starting Out with Programming Logic and Design (What's New in Computer Science), By Tony Gaddis, 5th Edition 2018. 2. Programming Essentials: Beginning C++, by Ivor Horton, 4th Edition, 2014.	No
Recommended Texts	C++ How to Program, 6th Edition 2007 By P. J. Deitel - Deitel & Associates, Inc., H. M. Deitel - Deitel & Associates, Inc.	Yes
Websites	https://www.geeksforgeeks.org/c-plus-plus	

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

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

أستاذ المادة

م.د. حيدر كريم مظهر

رئيس القسم

م.د. حيدر كريم مظهر

العميد

أ . د . هارون عبد الكاظم شهد

MODULE DESCRIPTION FORM

نموذج وصف مادة أسس الهندسة الكهربائية

Module Information معلومات المادة الدراسية					
Module Title	**Fundamental of Electrical Eng.**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CSTE1102**				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level	1		**Semester of Delivery**	1	
Administering Department	CSTE		**College**	EETC	
Module Leader	Asmaa Aqeel Hadi		**e-mail**	asmaa_aqeel_hadi@hilla-unc.edu.iq	
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**	MS.C	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date			**Version Number**	1.0	

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	1. To develop problem solving skills and understanding of circuit theory through the application of techniques. 2. To understand voltage, current and power from a given circuit. 3. This course deals with the basic concept of electrical circuits. 4. This is the basic subject for all electrical and electronic circuits. 5. To understand Kirchhoff's current and voltage Laws problems. 6. To perform Thevenin's Norton's Theorem. 7. Understanding the Alternating Current Network Types of Alternating Waveforms 8. Understanding the basic principle of series and parallel AC Circuit
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Recognize how electricity works in electrical circuits. 2. List the various terms associated with electrical circuits. 3. Summarize what is meant by a basic electric circuit. 4. Discuss the reaction and involvement of atoms in electric circuits. 5. Describe electrical power, charge, and current. 6. Define Ohm's law. 7. Identify the basic circuit elements and their applications. 8. Discuss the operations of DC circuits in an electric circuit. 9. Discuss the various properties of resistors. 10. Explain the two Kirchhoff's laws used in circuit analysis. 11. Describe Thevenin's theorem and Norton's theorem and how they work 12. Explain the basic concepts o AC Circuits.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Definition: - Symbols And Abbreviations, Units, Electric Circuit & It's Element. The Direct Current Network. Ohms low, Charge, Force, Work, Power. Circuit Theory DC circuits – Current and voltage definitions, Passive sign convention and circuit elements, Combining resistive elements in series and parallel. Kirchhoff's laws and Ohm's law. Anatomy of a circuit, Network reduction Revision problem classes Fundamentals Resistive networks, voltage and current sources, Thevenin and Norton equivalent circuits, Conversion Delta To Star Connection, Superposition Method.

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

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	79	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	71	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	5
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	8	15% (15)	Continuous	
	Report	1	5% (5)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	LO # 1-7
	Final Exam	4hr	50% (40 + 10)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered

Week 1	Symbols And Abbreviations, Units, Electric Circuit & its Element, Ohms low.
Week 2	Series Circuits (Resistance in Series) Voltage Divider Rule.
Week 3	Parallel Circuits (Resistances in Parallel) Current Divider Rule.
Week 4	Open and Short Circuits, Source Transformation,
Week 5	Series-Parallel Circuits Transformation.
Week 6	Kirchhoff's Laws: Kirchhoff's current law (KCL) and its use in Network Analysis.
Week 7	Kirchhoff's voltage law (KVL) and its use in Network Analysis
Week 8	Conversion Delta to Star Connection and Conversion Star to Delta Connection
Week 9	Mid Term Exam + Superposition Method
Week 10	Thevenin's Theorem
Week 11	Norton's Theorem
Week 12	The Alternating Current Network Types of Alternating Waveforms, Generation of Alternating Current, and Definitions related to Alternating Waveforms
Week 13	The Mean and Effective Values of Current and Voltage
Week 14	Series and Parallel AC Circuits (R L C)
Week 15	**Preparing for final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: How to use ammeter, voltmeter and ohmmeter.
Week 2	Lab 2: Apply Ohm's Law
Week 3	Lab 3: Continuous Implementation for Lab1 and Lab2
Week 4	Lab 4: Apply Kirchhoff's law to measure current
Week 5	Lab 5: Continuous Implementation for Lab4
Week 6	Lab 6: Apply Kirchhoff's law to measure voltages
Week 7	Lab 7: Continuous Implementation for Lab6
Week 8	Lab 8: Superposition Method
Week 9	Lab 9: Norton's Theorem.
Week 10	Lab 10: Continuous Implementation for Lab9
Week 11	Lab 11: Thévenin's Theorem.
Week 12	Lab 12: Continuous Implementation for Lab11
Week 13	Lab 13: Delta To Star Connection And Conversion Star To Delta Connection

Week 14	Lab 14: Continuous Implementation for Lab13
Week 15	Lab 15: Preparing for final Exam

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Fundamentals of Electric Circuits, C.K. Alexander and M.N.O Sadiku, McGraw-Hill Education	Yes
Recommended Texts	DC Electrical Circuit Analysis: A Practical Approach Copyright Year: 2020, dissidents.	No
Websites	https://www.coursera.org/browse/physical-science-and-engineering/electrical-engineering	

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

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

العميد

أ . د . هارون عبد الكاظم شهد

رئيس القسم

م.د. حيدر كريم مظهر

أستاذ المادة

م.م. أسماء عقيل هادي

MODULE DESCRIPTION FORM

نموذج وصف مادة الرسم الهندسي

Module Information معلومات المادة الدراسية					
Module Title	**Engineering Drawing**			**Module Delivery**	
Module Type	**Support or related learning activity**			☐ **Theory** ☐ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**EETC102**				
ECTS Credits	**5**				
SWL (hr/sem)	**125**				
Module Level	1		**Semester of Delivery**	1	
Administering Department	CSTE		**College**	EETC	
Module Leader	Ruqaya Nasir		**e-mail**		
Module Leader's Acad. Title	Asst. lecturer		**Module Leader's Qualification**	MSC.	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date			**Version Number**	1.0	

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	1. To develop spatial visualization skills: Enhance your ability to visualize and mentally manipulate objects in three-dimensional space based on two-dimensional drawings. Strengthen your spatial awareness and improve your understanding of complex engineering design 2. Learn sketching and taking field dimensions. 3. Take data and transform it into graphic drawings. 4. Learn basic engineering drawing formats. 5. Learn basic AutoCAD skills. 6. Learn who draw 2D drawings in AutoCAD.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Identify the basic of AutoCAD 2. Explain Drawing settings 3. How to drawing: Point, Line, Multiline, P line, Spline, X line, Rectangle. 4. How to drawing: Donut, Polygon, Circle, Arc, Ellipse 5. List Modify Tools Identify: Erase, Undo, Redo, Explode, Move, Copy, Rotate, Mirror, 6. Identify Array, Align, Scale, Stretch, Lengthen, Trim, Extend, Break, Join, Chamfer, Fillet. 7. Explain Zoom, Pan. 8. How to assign: Dimension - Linear, Aligned, Radius, Diameter, Center Mark, Angle, Arc length, Continuous, Baseline, Tolerance, Dimension Space, Dimension Break, Jogged radius, Ordinate dimensions. 9. Dealing with: Text, Style, M text, Scale text, Spell, 10. Knowing the Hatching Objects. 11. Drawing 3d modeling. 12. Drawing the Exercises .
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. **AutoCAD Software,** drawing settings, Drawing Tools, Line, Circle, Arc, Ellipse, Donut, Polygon, Rectangle, Point, Multiline, P line, Spline, X line. [20 hrs.] **Modify Tools** Erase, Undo, Redo, Explode, Move, Copy, Rotate, Mirror, Array, Align, Scale, Stretch, Lengthen, Trim, Extend, Break, Join, Chamfer, Fillet. [4 hrs.] **Display Control** Zoom, Pan, Redraw, Clean Screen. [4 hrs.] **Dimension** - Linear, Aligned, Radius, Diameter, Center Mark, Angle, Arc length,

	Continuous, Baseline, Tolerance, Dimension Space, Dimension Break, Jogged radius, Ordinate dimensions. [4 hrs.] Hatching Objects [4hrs] **Text**, Style, M text, Scale text, Spell, [4 hrs.] **3D MODELLING, Convert** 2D to 3D, Solid Editing [19 hrs.]

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

Student Workload (SWL) الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	62	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation
تقييم المادة الدراسية

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

Delivery Plan (Weekly Lab. Syllabus)
المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Introducing of Engineering Drawing
Week 2	Drawing settings of AutoCAD
Week 3	Drawing Tools: Point, Line, Multiline, P line, Spline, X line.
Week 4	Rectangle, Donut, Polygon
Week 5	Circle, Arc, Ellipse
Week 6	Modify Tools Erase, Undo, Redo, Explode, Move, Copy, Rotate, Mirror, Array, Align, Scale, Stretch, Lengthen, Trim, Extend, Break, Join, Chamfer, Fillet.
Week 7	Mid Term Exam + Display Control, Zoom, Pan, Redraw, Clean Screen.
Week 8	Dimension - Linear, Aligned, Radius, Diameter, Center Mark, Angle, Arc length, Continuous,

	Baseline, Tolerance, Dimension Space, Dimension Break, Jogged radius, Ordinate dimensions
Week 9	Annotation Tools Text, Style, M text, Scale text, Spell
Week 10	Hatching Objects
Week 11,12	3D modeling
Week13	Convert 2D To 3D
Week 14	Solid Editing + presenting a final project
Week 15	Preparatory week before the final Exam

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Introduction to AutoCAD 2010 By Alf Yarwood Copyright 2009	Yes
Recommended Texts	An Introduction to Autodesk Inventor 2010 and AutoCAD 2010 Unbnd Edition by Randy Shih	No
Websites	https://www.coursera.org/search?query=autocad&=null&index=prod_all_launched_products_term_optimization	

Grading Scheme
مخطط الدرجات

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

Fail Group (0 – 49)	**FX –** Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

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

أستاذ المادة

م.م. رقية نصر

رئيس القسم

م.د. حيدر كريم مظهر

العميد

أ . د . هارون عبد الكاظم شهد

MODULE DESCRIPTION FORM

نموذج وصف مادة الديمقراطية وحقوق الانسان

Module Information معلومات المادة الدراسية					
Module Title	**Democracy & Human Rights**			**Module Delivery**	
Module Type	**Basic**			☒ **Theory**	
Module Code	**MTU1006**				
ECTS Credits	2				
SWL (hr/sem)	50				
Module Level	1		**Semester of Delivery**	1	
Administering Department	CSTE		**College**	EETC	
Module Leader	عمار حسين ترف		**e-mail**		
Module Leader's Acad. Title	Assistant Lecturer		**Module Leader's Qualification**	Msc	
Module Tutor			**e-mail**		
Peer Reviewer Name					
Scientific Committee Approval Date			**Version Number**	1.0	

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	Course objectives: 1- The graduate engineer will be introduced to human rights and basic freedoms 2- He should be an engineer with a general culture through which he can manage work that is subject to the standards of human rights and freedoms 3- Be active in society and be able to participate in national political events, as a candidate, voter, official 4- Get acquainted with the mechanisms of democracy, elections, and how to participate in them 5- Get acquainted with the laws and regulations that protect human rights and basic freedoms 6- Sharing the community's concerns for patriotism
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1- Explaining human rights and freedoms 2 – Understanding the historical dimension of the development of the concept of human rights 3 – Explaining the religious impact in perpetuating the issue of human rights 4- Teaching students international, regional and local laws and instruments (constitutions) regulating human rights and basic freedoms. 5 -Understanding the International and local guarantees for the enforcement of human rights 6 – Knowing the concept of freedom and its types 7 – Knowing the meaning of Democracy, its concept, types, and applications 8- the goal of Elections, implementation mechanisms, methods of rigging them 9- Knowing Election laws 10- Evaluating the democratic experience in Iraq after 2003

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

By theoretical Lectures and showing examples from around the world

Student Workload (SWL)
الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	17	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	1
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	50		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	3	15% (15)	5, 10, 12	LO #1, 2, 10 and 11
	Assignments	2	15% (15)	2, 12	LO # 3, 4, 6 and 7
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	LO # 1-7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1-15	1- Why human rights, the concept of human rights 2- The history of human rights in ancient civilizations 3- Human rights in monotheistic religions, Islam as a model 4- Human rights in the Middle Ages 5- The role of revolutions and thinkers in human rights 6- Human rights in the modern era, the League of Nations, the United Nations

	7- Mid term Exam + The Universal Declaration and international human rights covenants and instruments 8- Human rights in regional agreements 9- Human rights in international non-governmental organizations 10- International guarantees for human rights and the role of the High Commissioner 11- Financial and administrative corruption and its role in obstructing the enforcement of human rights 12- Terrorism 13- Public freedoms, concept, types 14- Democracy, its types, implementation mechanisms, elections 15- Preparing for the final exam

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Binding prepared by Assistant Professor Hbeeb saleh	Yes
Recommended Texts	United Nations Library.	yes
Websites		

Grading Scheme
مخطط الدرجات

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

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أستاذ المادة

م.م. عمار حسين ترف

رئيس القسم

م.د. حيدر كريم مظهر

العميد

أ . د . هارون عبد الكاظم شهد

MODULE DESCRIPTION FORM

نموذج وصف مادة الورش الهندسية

Module Information معلومات المادة الدراسية					
Module Title	**Engineering Workshops**			**Module Delivery**	
Module Type	**Basic**			**Theory** **Lecture** ☒ **Lab** **Tutorial** **Practical** **Seminar**	
Module Code	**EETC101**				
ECTS Credits	**6**				
SWL (hr/sem)	**125**				
Module Level	1	**Semester of Delivery**	2		
Administering Department	CSTE	**College**	EETC		
Module Leader	Asmaa Aqeel Hadi	**e-mail**	Asmaa_aqeel_hadi@hilla-unc.edu.iq		
Module Leader's Acad. Title	Lecturer	**Module Leader's Qualification**	MS.C		
Module Tutor		**e-mail**			
Peer Reviewer Name		**e-mail**			
Scientific Committee Approval Date		**Version Number**	1.0		

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	The objective of studying Electrical, Electronic, and Mechanical workshops is to enable students to acquire the necessary skills and knowledge to deal with electrical, electronic, and mechanical systems and devices. This subject aims to teach students how to diagnose faults, repair systems, and perform maintenance on these systems and devices. By studying Electrical, Electronic, and Mechanical workshops, students can understand the principles of electricity, electronics, and mechanics, as well as how to read engineering diagrams and use various tools and equipment to work on them. They also learn how to diagnose faults, repair them, and properly maintain different devices in a safe manner. In general, studying this subject aims to prepare students to become skilled technicians in the field of electrical, electronic, and mechanical engineering. They can work in areas such as industrial maintenance and repair, electrical and electronic installations, automation and robotics, medical devices, and other modern technologies

Module Learning Outcomes مخرجات التعلم للمادة الدراسية	The learning outcomes of studying Electrical, Electronic, and Mechanical workshops include: Acquisition of diagnostic and repair skills: Students learn how to analyze problems, identify faults in electrical, electronic, and mechanical systems, and implement appropriate repair procedures. Understanding of electrical, electronic, and mechanical principles: Students gain knowledge of engineering and technical fundamentals related to electricity, electronics, and mechanics, including reading engineering diagrams and practical understanding of circuits, electronic devices, and mechanical components. Development of practical work skills: Students have the opportunity to learn hands-on and practice using various tools and equipment used in electrical, electronic, and mechanical workshops. Ability to perform preventive maintenance: Students learn how to maintain systems and devices and carry out preventive maintenance to ensure proper and sustainable performance. Enhancement of teamwork and communication skills: Studying Electrical, Electronic, and Mechanical workshops promotes collaboration among students and the ability to work as a team in problem-solving and executing practical projects.

	Overall, studying this subject prepares students to enter the job market in various technical and engineering fields, such as industrial maintenance, electrical and electronic installations, automation and robotics, medical devices, and other modern technologies.
Indicative Contents المحتويات الارشادية	Indicative content includes the following. <u>Part A – Electronic workshop</u> In this part, we will learn how to check the elements in the electrical circuits, what is the way each element works, how to check it, and find out what is damaged and replace it. [15 hrs] We will also talk about conductors and semiconductors [10 hrs] <u>Part B – Elctrical workshop</u> 1. Principles of Industrial Safety in Electrical Workshops[6 hrs.] 2. Tools Used in Electrical Workshops[6 hrs.]. 3. Power Sources and Characteristics[6 hrs.] 4. Multimeter and Wire Size Measurement[6 hrs.] <u>Part C – Mechanical workshop</u> 1. Different Types of Welding Irons and Spot Welding[6 hrs.] 2. Electric Transformers[6 hrs.] 3. Electric Circuits and Transformer Operation[6 hrs.]. 4. Types of Electric Motors[6 hrs.]

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

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	64	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	86	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	3	10% (10)	5, 8,11	LO #1, 2, 5
	Projects / Lab.	1	20% (20)	Continuous	ALL
	Report	2	10% (10)	13	ALL
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-3
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

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

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Encyclopedia of Electronic Components Volume1 (Charles Platt). J. Smith and E. Johnson, "Electrical Engineering Workshop:Theory and Practice	Yes / online
Recommended Texts		No
Websites		

Grading Scheme

مخطط الدرجات

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

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

آستاذ المادة

م.م. أسماء عقيل هادي

رئيس القسم

م.د. حيدر كريم مظهر

العميد

أ . د . هارون عبد الكاظم شهد

MODULE DESCRIPTION FORM

نموذج وصف مادة التصميم المنطقي الرقمي

Module Information معلومات المادة الدراسية					
Module Title	**Digital Logic Design**			**Module Delivery**	
Module Type	**Core**			✔ **Theory** **Lecture** ✔ **Lab** ✔ **Tutorial** **Practical** **Seminar**	
Module Code	**CSTE1201**				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level	1		**Semester of Delivery**	2	
Administering Department			**College**		
Module Leader	Hayder sahib shakir		**e-mail**	haider_sahib@hilla-unc.edu.iq	
Module Leader's Acad. Title	lecturer		**Module Leader's Qualification**	Ph.d	
Module Tutor			**e-mail**	E-mail	
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date			**Version Number**	1.0	

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	1. To be able to deal with the number systems and codes. 2. To understand the functionality of logic gates. 3. To have the skill to use the logic gates in designing logic circuits. 4. To have the skill to simplify the digital circuits. 5. To learn the simplification process, Boolean expression, Demorgans law, and Karnaugh map. 6. To understand the principles for designing logic circuits. 7. To understand adder, subtractor, decoder, encoder, multiplexer, demultiplexer, and comparator circuits.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Recognize each type of number system. 2. Identify the process of converting between number systems. 3. Summarize the types of logic gates. 4. Discuss the use of each gate. 5. Describe the design of a logic circuit by using logic gates. 6. Explain the simplification processes. 7. Explain Boolean expression and Demorgan's law. 8. Explain the Karnaugh map for different numbers of bits. 9. Discuss the design of the logic circuit before and after simplification. 10. Explain the combinational logic circuit. 11. Identify the adder, subtractor, decoder, encoder, multiplexer, demultiplexer. 12. Identify the basic circuit elements and their applications. 13. Identify the basic concepts of flip flops and its applications in synchronous and asynchronous counters
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Number systems - decimal, binary, octal, hexadecimal number system, conversion, operation. [10 hrs] Codes- excess-3, gray code, conversions, operations, complements [5 hrs] Logic gates-NOT, AND, OR, NOR, NAND, XOR, XNOR. [5 hrs] Logic simplification- Boolean theorem and Demorgans law. [10 hrs] Karnaugh map-SOP, POS, and don't care. [15 hrs] Arithmetic operations Part A- adder, parallel binary adder, subtractor, adder-subtractor. [10 hrs]

	Arithmetic operations Part B- multiplexer, demultiplexer, decoder, encoder. [10 hrs] Flip Flops types and applications [4] Synchronous and Asynchronous Counters [6]

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

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

Student Workload (SWL)
الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	79	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	71	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	5
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	7	15% (15)	Continuous	
	Report	1	5% (5)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	٢hr	10% (10)	7	LO # 1-7
	Final Exam	4hr	50% (40+10)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	Number systems (decimal, binary, octal, conversions, operations)
Week 2	Number systems (hexadecimal, BCD, conversions, operations)
Week 3	Number systems (excess-3, gray code, conversions, operations, complements)
Week 4	Logic gates (AND, OR, NOT, NAND, NOR, XOR, XNOR)
Week 5	Logic simplification (Boolean theorem)
Week 6	Logic simplification (Demorgan's theorem)
Week 7	Karnaugh maps (2-variables, 3-variables)
Week 8	Karnaugh maps (4-variables (SOP, POS, don't care))
Week 9	Karnaugh maps (5-variables, (SOP, POS, don't care))
Week 10	Arithmetic operations (adder, parallel binary adder)
Week 11	Arithmetic operations (subtractor, adder-subtractor circuit)
Week 12	Arithmetic operations (decoder, encoder)
Week 13	Arithmetic operations (Multiplexer, Demultiplexer)
Week 14	Flip-flop types and operation
Week 15	Synchronous and Asynchronous Counter
Week 16	**Preparatory week before the Final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: logic gates (NOT, AND, OR)
Week 2	Lab 2: Logic gates (NOR.NAND)
Week 3	Lab 3: Logic gates (XOR, XNOR)
Week 4	Lab 4: Boolean theorem
Week 5	Lab 5: Demorgan's law
Week 6	Lab 6: Karnaugh map
Week 7	Lab 7: SOP
Week 8	Lab 8: POS, don't care
Week 9	Combinational circuit (half adder, full adder)
Week 10	Combinational circuit (Half subtractor, full subtractor)

Week 11	Decoder and Encoder circuits
Week 12	Multiplexer and Demultiplexer circuits
Week 13	Flip Flop Latch
Week 14	Counters

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Digital Fundamentals by Floyed	Yes
Recommended Texts	Digital circuit analysis and design with Simulink modeling by Steven T. Karris	No
Websites	https://www.coursera.org/browse/physical-science-and-engineering/computer-engineering	

Grading Scheme
مخطط الدرجات

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

م.د. حيدر صاحب شاكر

رئيس القسم

م.د. حيدر كريم مظهر

العميد

أ . د . هارون عبد الكاظم شهد

MODULE DESCRIPTION FORM

نموذج وصف مادة الفيزياء العامة

Module Information معلومات المادة الدراسية					
Module Title	General Physics			**Module Delivery**	
Module Type	**Basic**			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CSTE1203**				
ECTS Credits	**5**				
SWL (hr/sem)	**125**				
Module Level	1		**Semester of Delivery**	2	
Administering Department	CSTE		**College**	EETC	
Module Leader	Malak kadhim		**e-mail**	malak.kadhim@hilla-unc.edu.iq	
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**	MS.C	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date			**Version Number**	1.0	

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	The aims of this subject are to: 1. Provide, through well-designed studies of experimental and practical physics, a worthwhile educational experience for all students, whether they go on to study

	science beyond this level and to enable them to acquire sufficient understanding. 2. Develop abilities and skills that are relevant to the study and practice of science and are useful in everyday life. 3. Develop attitudes relevant to science such as concern for accuracy and precision, objectivity, integrity, etc. 4. Stimulate interest in and care for the local and global environment. 5. Promote an awareness that the study and practice of science are cooperative and cumulative activities and are subject to social, economic, technological, ethical, and cultural influences and limitations. 6. The applications of science may be beneficial and detrimental to the individual, the community, and the environment. 7. The use of information technology is important for communications, as an aid to experiments, and as a tool for the interpretation of experimental and theoretical results.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	The learning outcomes for studying general physics are: 1. Understanding Fundamental Concepts: Students will develop a solid understanding of fundamental physics concepts, including physical quantities, units, and measurement, as well as key principles governing motion, forces, and energy. 2. Problem-Solving Skills: By studying kinematics and dynamics, students will acquire the ability to analyze and solve problems related to motion, forces, and the behavior of physical objects. 3. Conceptual Mastery: Students will master key concepts such as mass, weight, density, and the turning effect of forces, enabling them to apply these principles to real-world situations. 4. Pressure, Energy, Work, and Power: Learners will gain a comprehensive understanding of pressure, energy, work, and power and be able to calculate and apply these concepts to various physical systems. 5. Motion in Different Dimensions: Students will be able to analyze and describe the motion of objects in one, two, or three dimensions, allowing them to tackle more complex real-world scenarios. 6. Newton's Laws of Motion: Learners will comprehend and apply Newton's three laws of motion, providing them with the foundation for understanding and predicting the behavior of objects under the influence of forces. 7. Understanding Wave Properties: Students will gain a deep understanding of the general properties of waves, including wave mechanics, wave interference, and wave behavior, which are vital in various areas of physics. 8. Exploration of Light: A thorough understanding of the nature and properties of light, including its behavior, reflection, refraction, and dispersion, will be achieved. 9. Electromagnetic Spectrum: Students will learn about the electromagnetic

	spectrum, its different regions, and the practical applications of various types of electromagnetic waves. 10. Sound and Hearing: A comprehensive understanding of the physics of sound, including wave characteristics, propagation, and its perception by the human ear, will be attained. 11. Electromagnetism: The course will enable students to understand the relationship between electricity and magnetism, including electromagnetic induction, electromotive force, and the applications of electromagnetism in technology.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: Measurements 1. Introduction to Physical Quantities 2. Units and Measurement Newtonian Mechanics 1. Kinematics 2. Dynamics, Mass 3. Weight and Density 4. Turning Effect of Forces 5. Pressure 6. Energy, Work and Power Waves 1. General Wave Properties 2. Light 3. Electromagnetic Spectrum 4. Sounds Electricity and Magnetism 1. Static Electricity & Practical Electricity 2. Magnetism & Electromagnetism

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

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

Student Workload (SWL)
الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	79	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5

Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	46	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	10% (10)	5, 10	LO #1-4 and 5,6
	Assignments	2	10% (10)	2, 12	LO # 1, 2 and 9
	Projects / Lab.	8	15% (15)	Continuous	
	Report	1	5% (5)	13	LO # 10
Summative assessment	**Midterm Exam**	٢hr	10% (10)	7	LO # 1-6
	Final Exam	3hr	40% (50)	16	All
	Final Lab Exam	1hr	10% (10)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	**Introduction Physical Quantities, Unites and Measurement** Dimensions and Units Dimensional Analysis Conversion of Units
Week 2	**Kinematics and Dynamics** Reference Frames and Displacement Average Velocity Instantaneous Velocity Acceleration Motion at Constant Acceleration Freely Falling Objects Force and Motion Collisions and Impulse

	Projectile Motion
Week 3	**Mass, weight and Density** Definition of Mass Units and Law of Mass Definition of Weight Units and Law of Weight Definition of Density Units and Law of Density Specific gravity
Week 4	**Turning Effect of Forces** Moment of a Force Principle of Momentum Conditions of Equilibrium
Week 5	**Pressure, Energy, Work, and Power** Definition of Pressure Units and Law of Pressure Pressure in Liquids Definition of Energy Units and Law of Energy Kinetic energy Potential Energy Definition of Work Units And Law Of Work Definition of Power Units and Law of Power
Week 6	**Motion Along a Straight Line** Displacement, Time, and Average Velocity Motion Position and Displacement Average Velocity and Average Speed
Week 7	**Motion in Two or Three Dimensions** Position and Velocity Vectors Acceleration Vector Projectile Motion

Week 8	**Newton's Laws of Motion** Newton's First Law Newton's Second Law Newton's Third Law
Week 9	**Mid Term Exam**
Week 10	**General Wave Properties** Mechanical Waves Transverse waves Longitudinal waves Surface waves Measuring a Wave
Week 11	**Light** Introduction Definition of Light What is of Light Properties of Light Application of Light
Week 12	**Electromagnetic Spectrum** Definition of Electromagnetic Spectrum Type of Electromagnetic Spectrum Detecting Electromagnetic Waves from Space Energy in Electromagnetic Waves
Week 13	**Sounds and Hearing** Definition of Sound and Hearing Speed of Sound, Frequency and Wavelength Sound Intensity and Sound Level Definition of Hearing The Hearing Mechanism
Week 14	**Magnetism** Introduction The Source of All Magnetism

	Universal Characteristics of Magnets and Magnetic Poles Earth's Magnetic Poles Types of Magnetism
Week 15	**Electromagnetism** Introduction Faradays Law Emf induced in a moving conductor Energy stored in a magnetic field

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Experiment 1: Dynamics – Force, Newton's Three Laws, and Friction
Week 2	Experiment 2: Investigating the Laws of Motion with a Simple Pendulum
Week 3	Experiment 3: Tuning Fork
Week 4	Experiment 4: Equilibrium of a Rigid Body
Week 5	Experiment 5: Determining Hooks law
Week 6	Experiment 6: Verifying Newton's Third Law with Colliding Objects
Week 7	Experiment 7: Investigating Wave Properties - Wavelength, Frequency, and Speed
Week 8	Experiment 8: Refraction of Light in Different Media

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Fundamentals of Physics, by David Halliday, Jearl, Walker, and Robert Resnick, Wiley	
Recommended Texts	Seraway,_Physics_for_Scientists_and_Engineers_6E_by_Serway_and_Jewett	
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 – 100	Outstanding Performance
	B - Very Good	جيد جدا	80 – 89	Above average with some errors
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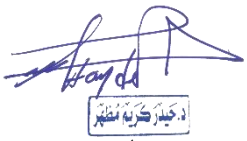
العميد

أ . د . هارون عبد الكاظم شهد



رئيس القسم

م.د. حيدر كريم مظهر

أستاذ المادة

م.م. ملاك كاظم

MODULE DESCRIPTION FORM

نموذج وصف مادة الرياضيات ٢

Module Information معلومات المادة الدراسية					
Module Title	**Mathematics II**			**Module Delivery**	
Module Type	**Basic learning activities**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CSTE1204**				
ECTS Credits	**5**				
SWL (hr/sem)	**150**				
Module Level	1		**Semester of Delivery**	2	
Administering Department	CSTE		**College**	EETC	
Module Leader	Husain Ali		**e-mail**		
Module Leader's Acad. Title	Assistant Lecturer		**Module Leader's Qualification**	MSc.	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date			**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	**CSTE 1104 - Mathematics I**	**Semester**	1
Co-requisites module	None	**Semester**	

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

	multiplication, multiplication}. Furthermore, Determinant, Inverse (Nonsingular). [9 hrs] + Revision problem classes in weekly tutorials [3 hrs] Part C – System of Linear Equations. This part discusses System of Linear Equations (Linear Equations, Linear Equations Solution, Matrix equations.), in addition to Row operations, row-echelon form "triangular", Rank of a Matrix, reduced row-echelon form, Augmented Matrix. Furthermore, Gaussian elimination, Gauss–Jordan elimination, Solving Systems with Inverses, Cramer's Rule is described. [13 hrs] + Revision problem classes in weekly tutorials [4 hrs] Part D – Vector Spaces and Diagonalization. This part discusses Vector Spaces (Linear Combinations of Vector, span, Linear Dependence and Independence, Basis and Dimension, Rank of a Matrix, Linear Transformations. Furthermore, Diagonalization (Polynomials of Matrices, Characteristic Polynomial, Cayley–Hamilton Theorem, Eigenvalues and Eigenvectors, Diagonalizing Matrices.) [15 hrs] + Revision problem classes in weekly tutorials [5 hrs]

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

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

Student Workload (SWL)
الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	62	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	20% (20)	5, 10	LO #1 - 4, 5 - 9
	Assignments	2	20% (20)	7, 14	LO # 1 - 6, 7 and 13
	Projects / Lab.	N/A			
	Report	N/A			
	Midterm Exam	٢ hr	10% (10)	8	LO # 1-7

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

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

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

Delivery Plan (Weekly Tutorial)

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

Learning and Teaching Resources
مصادر التعلم والتدريس

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

Grading Scheme
مخطط الدرجات

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

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

العميد

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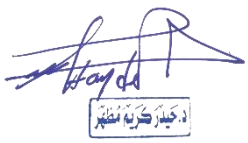

رئيس القسم

م.د. حيدر كريم مظهر

أستاذ المادة

م.م. حسين علي

MODULE DESCRIPTION FORM

نموذج وصف مادة اللغة العربية ١

Module Information معلومات المادة الدراسية					
Module Title	**Arabic Language**			**Module Delivery**	
Module Type	**Support or related learning activity**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**MTU1001**				
ECTS Credits	**2**				
SWL (hr/sem)	**50**				
Module Level		1	**Semester of Delivery**		2
Administering Department		CSTE	**College**	EETC	
Module Leader			**e-mail**		
Module Leader's Acad. Title		Assistant Lecturer	**Module Leader's Qualification**		MSc
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date			**Version Number**		1.0

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

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

Module Aims أهداف المادة الدراسية	أهداف المادة الدراسية هي اني يكون الطالب قادراً على أن : ١. يتعرف على أنواع الأخطاء اللغوية المشتركة وتوضيح أسبابها وكيفية تجنبها. ٢. يتعلم القواعد المتعلقة بالتاء المربوطة والطويلة والتاء المفتوحة وكيفية كتابتها بشكل صحيح. ٣. يتعلم قواعد كتابة الألف الممدودة والمقصورة واستخدام الحروف الشمسية والقمرية بشكل صحيح. ٤. التعرف على الضاد والظاء ومعرفة كيفية التمييز بينهما في الكتابة. ٥. يتعلم طرق كتابة الهمزة بشكل صحيح وفقًا للقواعد اللغوية. ٦. التعرف على علامات الترقيم واستخدامها بشكل صحيح في النصوص. ٧. يفهم الفروق بين الاسم والفعل والتمييز بينهما في الجمل. ٨. يفهم المفاعيل و كيفية استخدامها بشكل صحيح في النصوص. ٩. يتعلم الأرقام والعدد واستخدامها في التعبير عن الكميات. ١٠. يتجنب الأخطاء اللغوية الشائعة في سياقات عملية لتعزيز فهم القواعد وتحسين المهارات اللغوية. ١١. يدرس النون والتنوين وفهم معاني حروف الجر واستخدامها بشكل صحيح في الجمل. ١٢. يركز على الجوانب الشكلية للخطاب الإداري وكيفية كتابته بأسلوب صحيح ومناسب. ١٣. التعرف على لغة الخطاب الإداري وفهم استخدامها في التواصل الإداري. ١٤. يفهم نماذج من المراسلات الإدارية لتطبيق المفاهيم والمهارات المكتسبة في الخطاب الإداري.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	مخرجات التعلم للمادة الدراسية هي: ١. قدرة الطلاب على تحليل وتعريف الأخطاء اللغوية المشتركة وتطبيق القواعد الصحيحة لتجنبها. ٢. القدرة على استخدام القواعد اللغوية المتعلقة بالتاء المربوطة والطويلة والتاء المفتوحة بشكل صحيح. ٣. قدرة الطلاب على استخدام الألف الممدودة والمقصورة بشكل صحيح واستخدام الحروف الشمسية والقمرية بطريقة صحيحة. ٤. تمكين الطلاب من التمييز بين الضاد والظاء وتطبيق القواعد الصحيحة في الكتابة. ٥. القدرة على كتابة الهمزة بشكل صحيح وفقًا للقواعد اللغوية. ٦. استخدام علامات الترقيم بشكل صحيح في النصوص المكتوبة. ٧. فهم الطلاب للفروق بين الاسم والفعل وتمكينهم من استخدامهما بشكل صحيح في الجمل. ٨. القدرة على استخدام المفاعيل بشكل صحيح في النصوص المكتوبة. ٩. استخدام الأرقام والعدد بطريقة صحيحة للتعبير عن الكميات. ١٠. التمكن من تطبيق الأخطاء اللغوية الشائعة في سياقات عملية وتصحيحها بشكل مناسب. ١١. فهم استخدام النون والتنوين ومعاني حروف الجر واستخدامها بشكل صحيح في الجمل. ١٢. القدرة على كتابة الخطاب الإداري بأسلوب صحيح ومناسب وفهم لغة الخطاب الإداري. ١٣. تطبيق المفاهيم والمهارات المكتسبة في كتابة المراسلات الإدارية بشكل صحيح وفعال.
Indicative Contents المحتويات الإرشادية	توفر هذه المحتويات الإرشادية للطلاب فهمًا شاملاً للمفاهيم اللغوية وتعلم القواعد والتطبيقات العملية التي تساعدهم في تطوير مهاراتهم اللغوية. المحتويات الإرشادية في مادة اللغة تشمل مجموعة من المفاهيم والمواضيع التي يتم تغطيتها خلال عملية التعلم. ومن بين المحتويات الإرشادية المهمة: ١. مقدمة عن الأخطاء اللغوية والتعريف بالتاء المربوطة والتاء المطوَّلة والتاء المفتوحة. (٤ ساعات) ٢. قواعد كتابة الألف الممدودة والمقصورة والتعرف على الحروف الشمسية والقمرية. (٤ ساعات) ٣. دراسة الضاد والظاء وتعلم طرق كتابتهما بشكل صحيح. (٤ ساعات) ٤. تعلم كتابة الهمزة بشكل صحيح وفقًا للقواعد اللغوية. (٤ ساعات) ٥. دراسة علامات الترقيم وتعلم استخدامها بشكل صحيح في النصوص اللغوية. (٤ ساعات) ٦. التعرف على الاسم والفعل والتفريق بينهما وفهم القواعد المتعلقة بهما. (٤ ساعات) ٧. دراسة المفاعيل وتعلم استخدامها في الجمل اللغوية. (٤ ساعات) ٨. التعرف على الأعداد واستخدامها بشكل صحيح في العبارات والجمل. (٤ ساعات) ٩. دراسة الأخطاء اللغوية الشائعة وتطبيقاتها في النصوص اللغوية. (٤ ساعات) ١٠. تعلم استخدام النون والتنوين وفهم معاني حروف الجر واستخدامها بشكل صحيح في الجمل. (٣ ساعات) ١١. التعرف على الجوانب الشكلية للخطاب الإداري وفهم لغته وقواعده. (٣ ساعات) ١٢. دراسة نماذج من المراسلات الإدارية وتطبيقها في الكتابة. (٣ ساعات)

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	استراتيجيات التعلم والتعليم المستخدمة في مادة اللغة تشمل مجموعة متنوعة من النهج والتقنيات التي تعزز عملية التعلم للطلاب. من بين هذه الاستراتيجيات: ١. التفاعل النشط: يتم تشجيع الطلاب على المشاركة والمشاركة الفعالة في الدروس من خلال المناقشات الجماعية والأنشطة التفاعلية. ٢. التعلم التعاوني: يشجع التعاون والتعاون بين الطلاب من خلال العمل الجماعي والمشاريع الجماعية، حيث يتعاون الطلاب مع بعضهم البعض لتحقيق أهداف التعلم المحددة. ٣. التطبيق العملي: يتم توفير فرص للطلاب لتطبيق المفاهيم والمهارات المكتسبة في سياقات عملية وواقعية، مما يعزز التفاعل الفعال مع المادة. ٤. استخدام التقنيات الحديثة: يستفيد الطلاب من استخدام التكنولوجيا في عملية التعلم، مثل استخدام الحواسيب والإنترنت للبحث والتعلم الذاتي. ٥. توفير ردود فعل فورية: يتم توفير ردود فعل فورية وتقييم مستمر للطلاب، سواء عن طريق التقييمات الشفهية أو الكتابية، مما يساعدهم على تحسين أدائهم وتطوير مهاراتهم. ٦. التنويع في وسائل التواصل: يتم استخدام مجموعة متنوعة من وسائل التواصل والتعليم، مثل المحاضرات التوضيحية، والمناقشات الجماعية، والأنشطة العملية، والعروض التقديمية، لتلبية احتياجات وأساليب التعلم المختلفة للطلاب. ٧. باستخدام هذه الاستراتيجيات، يتم تعزيز التفاعل والتعلم الفعال للطلاب، و ٨. تحفيزهم على المشاركة واكتساب المعرفة والمهارات بشكل شامل وشيق.

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

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	17	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	1
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	50		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	15% (15)	5, 10	LO #1, 2, 8 and 9
	Assignments	2	15% (15)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.				
	Report	1	10% (10)	14	LO # 1-14
Summative assessment	**Midterm Exam**	2 hours	10% (10)	7	LO # 1-7
	Final Exam	3 hours	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري		
الأسبوع الأول	مقدمة عن الأخطاء اللغوية –التاء المربوطة والطويلة والتاء المفتوحة	١-٨
الأسبوع الثـــاني	قواعد كتابة الالف الممدودة والمقصورة – الحروف الشمسية والقمرية	٩-١٤
الاسبوع الثـــالث	الضاد والظاء	١٥-١٩
الأسبوع الـــرابـع	كتابة الهمزة	٢٠-٣٠
الأسبوع الخـــامس	علامات الترقيم	٣١-٣٦
الأسبوع الســـادس	الاسم والفعل والتفريق بينهما	٣٧-٤٤
الأسبوع الســـابع	المفاعيل	٤٥-٥٠
الأسبوع الثـــامن	العـــدد	٥١-٦١
الأسبوع التاسع والعاشر	تطبيقات الأخطاء اللغوية الشائعة	٦٢-٦٩
الاسبوع الحادي عشر	النون والتنوين ـ معاني حروف الجر	٧٠-٧٥
الاسبوع الثاني عشر	الجوانب الشكلية للخطاب الإداري	٧٦-٨٠
الأسبوع الثالث عشر والرابـــع عشر	لغة الخطاب الإداري	٨١-٨٦
الأسبوع الخامس عشر	نماذج من المراسلات الإدارية	
الأسبوع السادس عشر	الاستعداد للأمتحان النهائي	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	١٦. ملزمة اللغة العربية (المعممة من وزارة التعليم العالي والبحث العلمي)	Yes
Recommended Texts		No
Websites	The Collage E-Library	

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
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	F – Fail	راسب	(0-44)	Considerable amount of work required

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

العميد

أ . د . هارون عبد الكاظم شهد

رئيس القسم

م.د. حيدر كريم مظهر

أستاذ المادة

م.م.

MODULE DESCRIPTION FORM

نموذج وصف مادة اللغة الإنكليزية ١

Module Information معلومات المادة الدراسية					
Module Title	**English Language (1)**			**Module Delivery**	
Module Type	**Support or related learning activity**			☒ **Theory** ☒ **Lecture** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**MTU1002**				
ECTS Credits	**3**				
SWL (hr/sem)	**50**				
Module Level	1		**Semester of Delivery**	2	
Administering Department	CSTE		**College**	EETC	
Module Leader	Qamar Dhiya Rafeeq Mirjan		**e-mail**	q8602037@gmail.com	
Module Leader's Acad. Title	Assistant Lecturer		**Module Leader's Qualification**	MSc	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date			**Version Number**	1.0	

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	The module aims of English Language (Beginner) are designed to help learners at the beginner level develop their English language skills and achieve specific learning objectives. While I don't have access to the specific module aims of this coursebook, I can provide you with a general outline of the typical aims for a beginner-level English course: 1. To introduce beginner-level learners to the English language, focusing on building vocabulary and acquiring essential language structures. 2. To develop listening and speaking skills through interactive activities and engaging in basic conversational practice. 3. To enhance reading comprehension abilities by introducing simple texts and emphasizing vocabulary and sentence structures. 4. To provide foundational writing skills, including sentence formation, paragraph writing, and completing basic forms. 5. To cultivate cultural awareness and equip learners with practical language skills for everyday situations, such as ordering food, shopping, and asking for directions.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	The module learning outcomes for the English Language (Beginner) module are as follows: 1. Develop basic proficiency in listening and understanding spoken English at a beginner level. 2. Demonstrate improved speaking skills by participating in simple conversations and expressing basic ideas and opinions. 3. Comprehend and interpret basic written texts, including short passages and simple dialogues. 4. Produce written texts using basic grammatical structures and vocabulary appropriate for beginner-level communication. 5. Increase vocabulary knowledge and usage to communicate in everyday situations effectively. 6. Develop an awareness of cultural aspects related to English-speaking countries and demonstrate cross-cultural understanding in language use. 6. Apply basic language skills in practical situations, such as greetings, introductions, making requests, and asking for and giving simple directions.
Indicative Contents المحتويات الإرشادية	Unit 1: Hello! [3 hrs.] Unit 2: Your world. [3 hrs.] Unit 3: All about you. [3 hrs.] Unit 4: Family and friends. [3 hrs.] Unit 5: The way I live. [3 hrs.] Unit 6: Every day[3 hrs.] Unit 7: My favorites. [3 hrs.] Unit 8: Where I live, Times past. [3 hrs.] Unit 9: We had a great time!, I can do that! [3 hrs.] Unit 10: Please and thank you, Here and now. [3 hrs.] Unit 11: It's time to go!, Getting to know you. [3 hrs.]

	Unit 12: The way we live, It all went wrong. [3 hrs.] Unit 13: Let's go shopping! [3 hrs.] Unit 14: What do you want to do? [3 hrs.] Unit 15: Tell me! What's it like? [3 hrs.]

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	The learning and teaching strategies for the English Language (Beginner) module may include: 1. Interactive Language Practice: Engage learners in communicative activities that promote active participation and language practice. This can include pair work, group discussions, role-plays, and language games. 2. Authentic Materials: Incorporate authentic materials such as videos, audio recordings, and reading texts that reflect real-life language use. This helps learners develop their listening, speaking, reading, and writing skills in authentic contexts. 3. Task-Based Learning: Design tasks and projects that require learners to use the target language to accomplish specific goals or solve problems. This promotes meaningful language use and encourages critical thinking and problem-solving skills. 4. Visual Aids and Multimedia: Utilize visual aids, charts, diagrams, and multimedia resources to support language learning and comprehension. Visuals can enhance understanding, aid in vocabulary acquisition, and provide context for language use. 5. Error Correction and Feedback: Provide timely and constructive feedback on learners' language production to help them identify and correct errors. Encourage self-correction and peer correction to foster a supportive learning environment.

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

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	17	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	1
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	50		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
	Quizzes	2	15% (15)	5, 10	LO #1, 2, 8 and 9

Formative assessment	**Assignments**	2	15% (15)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.				
	Report	1	10% (10)	14	LO # 1-14
Summative assessment	**Midterm Exam**	2 hours	10% (10)	7	LO # 1-7
	Final Exam	3 hours	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Hello!
Week 2	Your world.
Week 3	All about you.
Week 4	Family and friends.
Week 5	The way I live.
Week 6	Every day
Week 7	My favorites.
Week 8	Where I live. Times past.
Week 9	We had a great time! I can do that!
Week 10	Please and thank you. Here and now.
Week 11	It's time to go! Getting to know you.
Week 12	The way we live. It all went wrong.
Week 13	Let's go shopping!
Week 14	What do you want to do?
Week 15	Tell me! What's it like?
Week 16	Preparatory week before the final Exam

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Soars, J., Soars, L. (2014). New Headway Plus: Beginner Student's Book. United Kingdom: Oxford University Press.	Yes

	Soars, J., Soars, L. (2006). New Headway Plus: Pre-intermediate. United Kingdom: Oxford University Press.	
Recommended Texts	Audio CDs or Online Audio: Recordings of listening exercises, dialogues, and pronunciation practice.	No
Websites		

Grading Scheme
مخطط الدرجات

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

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

العميد

أ . د . هارون عبد الكاظم شهد

رئيس القسم

م.د. حيدر كريم مظهر

استاد الماده

م.م. قمر ضياء مرجان

المرحلة الثانية

UGII

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Data Structure & Algorithms**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CSTE2102**				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level	2		**Semester of Delivery**	3	
Administering Department	CSTE		**College**	EETC	
Module Leader	Zainab Fadhil Abbas		**e-mail**	Zainab.fadhil@hilla-unc.edu.iq	
Module Leader's Acad. Title	Asst. Lec.		**Module Leader's Qualification**	MS.C	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date			**Version Number**	1.0	

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

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

Module Aims أهداف المادة الدراسية	The purpose of this course is to provide the basic foundations of data structure and algorithms. A data structure is defined as a particular way of storing and organizing data in our devices to use the data efficiently and effectively. The goal of using data structures is to minimize the time and space complexities. An efficient data structure takes minimum memory space and requires minimum time to execute the data. Having a strong understanding of data structures and algorithms can improve students programming skills and coding abilities. It is important that students taking this Module have prior knowledge in programming.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	As a result of taking this course, the student should be able to: 1. Know and understand various principles and fundamentals of data structures and algorithms. 2. Understand Algorithmics. 3. Relationship among data, data stractures, and algorithms. 4. Analysis of algorithms. 5. Use of Array. 6. Use of Matrix. 7. Use of Stack. 8. Use of Queue. 9. Use of Linked Lists. 10. Use of Linear Search. 11. Use of Binary Search. 12. Use of Ternary Search. 13. Use of Jump Search. 14. Use of Bubble Sort. 15. Use of Selection Sort. 16. Use of Insertion Sort. 17. Use of Quick Sort. 18. Use of Merge Sort. 19. Demonstrate Nonlinear data structures: Tree, Graph. 20. Know to difference between Linear and Non-linear Data Structures. 21. Know and understand recursion and it's use with algorithms and dynamic programming.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Introduction to fundamentals of data structures and algorithms. Examples on Data structures (Array, Matrix, Linked lists, Stack, Queues) Using of programming language to demonstrate and implement those data structures Understanding and Implementing some program searching algorithms

	(Linear search, Binary search, Ternary search, Jump search) Understanding and implementing some program sorting algorithms (Bubble Sort, Selection Sort, Insertion Sort, Quick Sort, Merge Sort.) Demonstrating Nonlinear data structures such as Tree and Graph. And the difference between Linear and Non-linear Data Structures. Understanding of recursion and it's use with algorithms and dynamic programming.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted in delivering this module is to encourage student's participation in learning and developing their skills in programming, while at the same time using the best data structures in representing their data. And learning about various Searching and Sorting algorithms. This will be achieved through classes, interactive tutorials and by considering type of lab experiments involving assignments and programming activities.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	94	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	56	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	3	15% (15)	5, 7, 13	LO # (1 to 4), (5, 6, 7), (14 to 18)
	Assignments	1	5% (5)	8	LO # 10 to 13
	Projects / Lab.	5	15% (15)	Continuous	
	Report	1	5% (5)	14	LO # 19, 20 and 21
Summative assessment	Midterm Exam	2hr	10% (10)	8	LO # 1-13
	Final Exam	4hr	50% (40 + 10)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الأسبوعي النظري

	Material Covered
Week 1	Data structures and Algorithms.: An Overview
Week 2	Algorithmics.
Week 3	Relationship among data, data structures, and algorithms.
Week 4	Analysis of algorithms.
Week 5	Array (including String) and Matrix.
Week 6	Stack.
Week 7	Queue and Linked Lists.
Week 8	Linear Search and Binary Search.
Week 9	Ternary Search and Jump Search.
Week 10	Bubble Sort.
Week 11	Selection Sort and Insertion Sort.
Week 12	Quick Sort and Merge Sort.
Week 13	Tree, Graph: As Nonlinear data structures.
Week 14	The difference between Linear and Non-linear Data Structures.
Week 15	Recursion and it's use with algorithms and dynamic programming.

Delivery Plan (Weekly Lab. Syllabus) المنهاج الأسبوعي للمختبر	
	Material Covered
Week 1	Lab1: Introduction to Object-Oriented Programming.
Week 2	Lab 2: Classes and Objects.
Week 3	Lab 3: Array
Week 4	Lab 4: Matrix
Week 5	Lab 5: Stack
Week 6	Lab 6: Queue
Week 7	Lab 7: Linked Lists
Week 8	Lab 8: Linear Search
Week 9	Lab 9: Binary Search
Week 10	Lab 10: Bubble Sort
Week 11	Lab 11: Selection Sort
Week 12	Lab 12: Quick Sort

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	- Data Structures Using C++, VARSHA H. PATIL, Oxford University Press 2012. - Other related reference in case the Programming Language selected for the module is different.	No
Recommended Texts	- C++ PROGRAMMING: PROGRAM DESIGN INCLUDING DATA STRUCTURES, D.S. MALIK, SEVENTH EDITION, Cengage Learning 2015.	No
Websites	https://www.geeksforgeeks.org/	

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

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

أستاذ المادة	رئيس القسم	العميد
م.م. زينب فاضل عباس	م.د. حيدر كريم مظهر	أ . د . هارون عبد الكاظم شهد

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Electronic Fundamentals**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CET2102**				
ECTS Credits	**5**				
SWL (hr/sem)	**125**				
Module Level	2		**Semester of Delivery**	3	
Administering Department	CSTE		**College**	EETC	
Module Leader	Asmaa Aqeel Hadi		**e-mail**	asmaa_aqeel_hadi@hilla-unc.edu.iq	
Module Leader's Acad. Title	Asst. Lec.		**Module Leader's Qualification**	MSc.	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date			**Version Number**	1.0	

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

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Aims أهداف المادة الدراسية	1. To understand materials conductivity, semiconductor materials, and types 2. This is the basic subject for all electronic circuits and devices. 3. This course deals with the first and the simplest semiconductor device, diode, diode physical construction, biasing, characteristics, application circuits, and Zener 4. Mathematical derivation and implementation of the load line analysis and Q point within the diode characteristics curve to develop problem-solving skills and understanding of diode circuits. 5. This course deals with the second semiconductor device, BJT. This course deals with BJT physical construction, biasing, configuration methods, input, and output characteristics 6. To understand the D.C biasing of BJT and circuit types, analysis, and calculations of BJT parameters 7. To understand and construct re model for BJT circuits 8. To deal with the small signal analysis of BJT
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Recognize classifications of materials according to their conductivity. 2. Identify the semiconductor material characteristics and classifications 3. Recognize the physical structure and properties of P and N layers 4. Identify the diode as the first example of the semiconductor device. 5. Discuss diode physical construction, biasing, and characteristics. 6. Identify the variable parameters of diodes and V threshold. 7. Summarize what is meant by Load line analysis and Q point 8. Identify the applications of diodes in electrical circuits using AC. And DC. Power supplies 9. To understand the concept of Zener region and the differences between Zener and original diodes 10. To solve Zener circuits and calculate its voltage current with different cases. 11. To understand and discuss the second semiconductor device which is Transistor (Bipolar Junction Transistor)(BJT) 12. To discuss BJT physical construction, Operation, and configuration methods 13. To understand and implement input and output Characteristics of each configuration method and load line and Q point implementations 14. To implement and solve BJT biasing circuit types and calculations of important parameters of BJT in DC. Biasing state 15. Design BJT circuit types by using Quesent point parameters 16. Understand and construct re model for BJT circuits 17. Derive and calculate Zi, Zo Av, and AI from the model of BJT circuits 18. Understand and calculate small signal analysis of BJT.

Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Semiconductor Materials Energy Levels, n- and p-Type, Semiconductor Diode Construction, biasing, Characteristics and Zener Diodes, Load-Line Analysis [8 hrs] . Series Diode Configurations with DC Inputs, Parallel and Series-Parallel Configurations Sinusoidal Inputs Half-Wave Rectification, Full-Wave Rectification Clippers, Clampers, Zener Diodes Voltage-Multiplier Circuit [10hrs] Transistor Construction, Transistor Operation, Common-Base Configuration Transistor Amplifying Action, Common-Emitter Configuration, Common-Collector Configuration, Limits of Operation [8hrs] Operating Point, Fixed-Bias Circuit, Emitter-Stabilized Bias Circuit, Voltage-Divider Bias, DC Bias with Voltage Feedback, Miscellaneous Bias Configurations, Design Operations Transistor Switching Networks, [[15 hrs] Revision problem classes [12 hrs] BJT Transistor Modeling The Important Parameters: Zi, Zo, A v, A i The r e Transistor Model The Hybrid Equivalent, small signal analysis Common-Emitter Fixed-Bias Configuration, Voltage-Divider Bias CE Emitter-Bias Configuration Emitter-Follower Configuration Common-Base Configuration[11 hr]

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

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	64	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	61	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	5
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	3	10% (10)	5, 10, 13	LO 10, 15, 18
	Assignments	3	10% (10)	5, 10, 13	LO # 8, 14, 18
	Projects / Lab.	5	15% (15)	Continuous	
	Report	1	5% (5)	13	LO #
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO #
	Final Exam	2hr	50% (40 + 10)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction, Semiconductor Materials, Energy Levels, Extrinsic Materials—n- and p-Type
Week 2	Semiconductor Diode construction, biasing, characteristics, Zener region
Week 3	Load-Line Analysis, RESISTANCE LEVELS, DIODE EQUIVALENT CIRCUITS
Week 4	Series Diode Configurations with DC Inputs, Parallel and Series-Parallel Configurations
Week 5	Sinusoidal Inputs; Half-Wave Rectification, Full-Wave Rectification
Week 6	Clippers series and parallel
Week 7	Clampers, Zener Diodes, Introduction, Transistor Construction
Week 8	Transistor Operation, Common-Base Configuration Transistor, Amplifying Action, Common-Emitter Configuration, Limits of Operation

Week 9	Operating Point ,Fixed-Bias Circuit ,Emitter-Stabilized Bias Circuit ,
Week 10	Voltage-Divider Bias , DC Bias with Voltage Feedback , Miscellaneous Bias Configurations
Week 11	Design Operations , Transistor Switching Networks
Week 12	Amplification in the AC Domain, BJT Transistor Modeling ,The Important Parameters: Zi, Zo, A v, A The re Transistor Model
Week 13	Small signal analysis
Week 14	Common-Emitter Fixed-Bias Configuration Voltage-Divider Bias
Week 15	CE Emitter-Bias Configuration Emitter-Follower Configuration Common-Base Configuration
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Lab 1: Introduction
Week 2	Lab 2: Diode characteristics
Week 3	Lab 3 Zener diode characteristics
Week 4	Lab 4 Half wave rectifier
Week 5	Lab 5: full wave rectifier
Week 6	Lab 6: Half and full wave rectifier with filter
Week 7	Lab 7: clippers

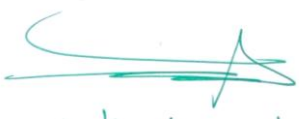
Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	**Available in the Library?**
Required Texts	Electronic devices and circuit theory Boylested	Yes
Recommended Texts		No
Websites		

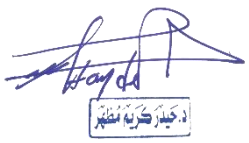
Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory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

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



العميد

أ . د . هارون عبد الكاظم شهد



رئيس القسم

م.د. حيدر كريم مظهر

أستاذ المادة

م.م. أسماء عقيل هادي

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Linux Essentials**			**Module Delivery**	
Module Type	Basic Learning Activities			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CSTE2106**				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level	2		**Semester of Delivery**	3	
Administering Department	**CSTE**		**College**	EETC	
Module Leader	SHuhub Ahmed		**e-mail**	Shuhuba25@gmail.com	
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**	Ph.D.	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date			**Version Number**	1.0	

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

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Aims أهداف المادة الدراسية	1. install, configure and manage Linux-systems. 2. explain the file system structure and the underlying security model, 3. account for and manage the most common commands in a Linux system, 4. write simpler programs in command languages (scripts) and 5. give examples of different techniques used to work with remote computers.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. **Demonstrate Basic Knowledge of Linux**: Students will be able to articulate the history, purpose, and philosophy behind Linux and identify the differences between various distributions. 2. **Install and Configure Linux Systems**: Students will demonstrate the ability to install Linux, manage hardware peripherals, and configure the system settings to meet personal or professional needs. 3. **Navigate and manipulate the Linux Filesystem**: Students will become proficient in navigating the Linux filesystem hierarchy and perform various file operations including creating, deleting, moving, and copying files. 4. **Execute Command Line Operations**: Students will demonstrate the ability to use the command line interface (CLI) efficiently, including data manipulation, system information querying, and process management. 5. **Implement System Administration Tasks**: Students will understand and carry out basic system administration duties, including user management, system maintenance, and task scheduling. 6. **Manage Software and Packages**: Students will be proficient in using package management tools to install, update, and remove software. 7. **Create and Run Shell Scripts**: Students will demonstrate the ability to write, debug, and execute shell scripts to automate routine tasks. 8. **Employ Data Management and Processing Tools**: Students will utilize various command-line tools to process and manipulate data. 9. **Configure and Troubleshoot Network Settings**: Students will understand fundamental networking concepts and demonstrate the ability to configure and troubleshoot network connections on Linux systems. 10. **Monitor System Resources and Performance**: Students will use system monitoring tools to analyze and report on system performance, resource usage, and system logs. 11. **Apply Security Principles**: Students will understand basic security concepts, manage user permissions, and file security, and implement security measures like firewalls. 12. **Utilize Linux Containers**: Students will gain introductory experience with containerization in Linux, demonstrating basic usage of tools like Docker to manage and deploy containers.technical concepts and proposals to both technical and non-technical stakeholders.

Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Part A: introduction to software engineering and its techniques (Estimated time: 10 hours) Part B: Cost Estimation, project requirements (Estimated time: 15 hours) Part C: Scheduling and Delivery (Estimated time: 15 hours) Part D: software Architecture (Estimated time: 15 hours) Part E: Testing and Integration (Estimated time: 15 hours)

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Effective learning and teaching strategies involve creating an engaging and interactive learning environment. This can be achieved through a combination of various approaches, such as incorporating active learning techniques like group discussions, problem-solving activities, and hands-on experiments. Additionally, employing visual aids, multimedia resources, and real-world examples can enhance comprehension and retention. Encouraging student participation and providing timely feedback also play vital roles in fostering student engagement and understanding. It is important to promote a growth mindset, encourage critical thinking, and create opportunities for collaboration and peer learning. By employing these strategies, educators can facilitate meaningful learning experiences and empower students to become active participants in their own learning journey.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	94	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	56	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5, 10	LO # [1 to 5], LO # [5 to 8]
	Assignments	2	10% (10)	6, 13	LO# [1 to 12]
	Projects / Lab.	5	15% (15)	Continuous	
	Report	1	5% (5)	13	LO # 1 to 12
Summative assessment	Midterm Exam	2 hrs.	10% (10)	8	LO # 1 to 7
	Final Exam	4hrs.	50% (40 + 10)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction to Linux
Week 2	Exploring Linux Distributions
Week 3	Navigating the Filesystem
Week 4	Command Line Proficiency
Week 5	File Management and Manipulation
Week 6	System Administration Basics
Week 7	Software Management
Week 8	**Midterm Exam**
Week 9	Data Processing
Week 10	Shell Scripting Basics
Week 11	Networking Fundamentals in Linux
Week 12	Introduction to Linux Containers
Week 13	System Monitoring and Performance
Week 14	Linux Security Basics
Week 15	Comprehensive Review

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	**Linux distros**

Week 2	**Linux layout**
Week 3	**Navigating the Filesystem**
Week 4	**Command Line Proficiency**
Week 5	**File Management and Manipulation**
Week 6	**System Administration Basics**
Week 7	**Midterm Exam (No lab session).**
Week 8	**Software Management**
Week 9	**Data Processing**
Week 10	**Shell Scripting Basics**
Week 11	
Week 12	**Networking Fundamentals in Linux**
Week 13	**Introduction to Linux Containers**
Week 14	**System Monitoring and Performance**
Week 15	**Linux Security Basics**
Week 16	**Final Exam (No lab session).**

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Title: **"UNIX and Linux System Administration Handbook" (5th Edition)** Author: **Evi Nemeth, Garth Snyder, Trent R. Hein, and Ben Whaley**	
Recommended Texts	Title: **"The Linux Command Line"** Author: **William E. Shotts, Jr.**	
Websites	URL: https://www.coursera.org/learn/linux-fundamentals	

Grading Scheme

مخطط الدرجات

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

Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

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

Type

أستاذ المادة	رئيس القسم	العميد
م.م. شهب احمد	م.د. حيدر كريم مظهر	أ . د . هارون عبد الكاظم شهد

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Computer Organization & Architecture**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CSTE2104**				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level	2		**Semester of Delivery**	3	
Administering Department	CSTE		**College**	EETC	
Module Leader	Baseem Adnan Altwajre		**e-mail**	baseem.adnan@hilla-unc.edu.iq	
Module Leader's Acad. Title	Asst. Lect.		**Module Leader's Qualification**	M.Sc	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date			**Version Number**		

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	1. To understand the basic operating concept of specific microprocessors. 2. To study the hardware architecture of a specific microprocessor. 3. To encode programs based on the specific processor language. 4. To solve problems encountered in the architecture of a specific microprocessor
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Identify the basic characteristics of a specific processor. 2. Define the processor signals and their functions. 3. Explain the architecture from the hardware point of view. 4. Identify various machine cycles. 5. Explain the different memory interfacing techniques with the microprocessor. 6. Explain the input-output different interfacing techniques with the microprocessor. 7. Explain the concept of Stack memory. 8. List the addressing mode of the processor instruction. 9. Encode different programs based on assembly. 10. Perform different arithmetic and logical operations using the processor instruction set. 11. Encode different problems associated with branching instructions. 12. Solve problems encountered with delay and counter. 13. Identify different interrupt procedures. 14. Design different interfacing systems due to the problem requirements.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. <u>Part A – Microprocessor H/W architecture</u> MP signals, MP operations, Machine cycle, memory interfacing, input-output devices interfaces [25hrs] <u>Part b – Microprocessor S/W architecture</u> Instruction set, data transfer, arithmetic, logical. [16 hrs] Stack register and stack area [8 hrs] Branching instructions and applications [16 hrs] Revision problem classes [6 hrs]

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

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	94	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	56	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	4, 10	LO #1- 6, 8-11
	Assignments	2	10% (10)	6, 13	
	Projects / Lab.	5	15% (15)	Continuous	
	Report	1	5% (5)	7,10	LO #1- 6, 8-11
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	4 hr	50% (40 + 10)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction - microprocessor evolution
Week 2	Basics specific microprocessor architecture and its specifications
Week 3	Microprocessor signals and machine cycle
Week 4	Memory organization, interfacing, and memory map
Week 5	Input devices interfacing
Week 6	Output devices interfacing
Week 7	**Mid Term Exam**
Week 8	Introduction to microprocessor assembly language and addressing mode
Week 9	Data transfer instruction
Week 10	Arithmetic instructions
Week 11	logical instruction
Week 12	Stack register, stack area, and related instructions
Week 13	Branching instruction
Week 14	Delay and counters
Week 15	Interrupt concepts and types, Subroutine
Week 16	**Preparatory week before the Final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: Introduction to microprocessor kit
Week 2	Lab 2: key function definition, read/write memory location, read/write registers
Week 3	Lab 3: Data transfer instructions
Week 4	Lab 4: Arithmetic instructions
Week 5	Lab 5: logical instruction
Week 6	Lab 6: Stack instructions
Week 7	Lab 7: Branching instruction

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	8085 µp architecture and programming_Gonkar	Yes
Recommended Texts	UNDERSTANDING 8085/8086 MICROPROCESSORS and PERIPHERAL ICs	No
Websites	https://www.coursera.org/browse/physical-science-and-engineering/electrical-engineering	

Grading Scheme
مخطط الدرجات

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

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العميد

أ . د . هارون عبد الكاظم شهد

رئيس القسم

م.د. حيدر كريم مظهر

أستاذ المادة

م.م. بسيم عدنان ناظم

5MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Numerical Analysis & Statistics**			**Module Delivery**	
Module Type	**Basic learning activities**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☒**Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CSTE2201**				
ECTS Credits	**4**				
SWL (hr/sem)	**100**				
Module Level	2		**Semester of Delivery**	2	
Administering Department	CSTE		**College**	EECT	
Module Leader	Ahmed Naif Hadi		**e-mail**	eng.ahmednaif@gmail.com	
Module Leader's Acad. Title	Assistant Lecturer		**Module Leader's Qualification**	M.Sc.	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date			**Version Number**	1.0	

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	1. To develop problem-solving skills and understanding of probability theory. 2. To distinguish aspects of probability terminology. 3. This course deals with Numerical Methods. 4. To understand Numerical Differentiation and Integration. 5. To perform Numerical Solution of Ordinary Differential Equations.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Recognize Basic terminology and Axioms for probability. 2. Discuss Conditional probabilities and independent events. 3. Explain random variables, Expectations, and variance. 4. Understand Bayes Theorem, PDF and CDF, Expectation, and variance of continuous random variables. 5. Define Binomial, Poisson, and Normal Distribution. 6. Discuss Joint and Marginal distribution aspects. 7. Discuss the Distributions of sums of independent random variables. 8. Explain the Expectation and variance of sums of random variables, in addition to Covariance and correlation, also Conditional expectation and Prediction. 9. Describe Numerical Analysis. Error Analysis. 10. Discuss Numerical Methods for Non-Linear Equations. 11. Get acquainted with Interpolation and Polynomial Approximation. 12. Explain the Significance of Numerical Differentiation Formulas. 13. Describe Numerical Integration and Quadrature Methods. 14. Explain the Numerical Solution of Ordinary Differential Equations. 15. Define the Numerical Solution of Boundary Differential Equations.
Indicative Contents المحتويات الإرشادية	Part A - Probability This part includes Sample spaces and events. Axioms for probability and their consequences. Conditional probabilities. Bayes' formula. Independent events. Definition of a random variable. Discrete random variables. Expectation and variance. Bayes Theorem, Discrete Probability Distributions, The cumulative distribution function. Probability density function. Expectation and variance of continuous random variables. Binomial Distribution, Poisson Distribution, Normal Distribution, Joint distribution functions. Marginal distributions. Independent random variables. Distribution of sums of independent random variables. Expectation and variance of sums of random variables. Covariance and correlation. Conditional expectation. Prediction. [30 hrs] + Revision problem classes in weekly tutorials [8 hrs] Part B – Numerical Analysis This part will take in details Numerical Analysis. Error Analysis. Numerical Methods for Non-Linear Equations: Newton-Raphson Method. Interpolation and Polynomial Approximation: Lagrange interpolation polynomial, Newton polynomial. Numerical Differentiation Formulas: Central Formula, Forward and Backward

	Formula. Numerical Integration and Quadrature Methods: Trapezoidal Method, Simpson's Method Numerical Solution of Ordinary Differential Equations: Taylor Method, Euler Method,

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

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

Student Workload (SWL)
الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	48	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	52	**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**	2	20% (20)	5, 10	LO # 1, 2, 10 and 11
	Assignments	2	20% (20)	3, 11	LO # 3, 4, 6 and 7
	Projects / Lab.	N/A			
	Report	N/A			
Summative assessment	**Midterm Exam**	2hr	10% (10)	8	LO # 1-7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Populations and Samples. Sample spaces and events. Axioms for probability and their consequences.
Week 2	Conditional probabilities. Bayes' formula. Independent events. Definition of random variable. Discrete random variables. Expectation and variance.
Week 3	Bayes Theorem, Discrete Probability Distributions, The cumulative distribution function.
Week 4	robability density function. Expectation and variance of continuous random variables. Binomial Distribution, Poisson Distribution, The Normal Distribution.
Week 5	Joint distribution functions. Marginal distributions.
Week 6	Independent random variables. Distributions of sums of independent random variables.
Week 7	Expectation and variance of sums of random variables. Covariance and correlation. Conditional expectation. Prediction..
Week 8	Midterm
Week 9	Introduction to Numerical Analysis. Error Analysis.
Week 10	Numerical Methods for Non-Linear Equations: Newton-Raphson Method.
Week 11	Interpolation and Polynomial Approximation: Lagrange interpolation polynomial, Newton polynomial.
Week 12	Numerical Differentiation Formulas: Central Formula, Forward and Backward Formula.
Week 13	Numerical Integration and Quadrature Methods: Trapezoidal Method, Simpson's Method
Week 14	Numerical Solution of Ordinary Differential Equations: Taylor Method, Euler Method, Runga Kutta Methods
Week 15	Numerical Solution of Boundary Differential Equations.
Week 16	Preparatory week before the final Exam

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

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	"Probability & Statistics for Engineers & Scientists", Ronald E. Walpole, Raymond H. Myers, Sharon L. Myers, Keying E. Ye, Pearson Education, 9th edition, (August 19, 2016), ISBN-13:	Yes

	978-1292161365.	
Recommended Texts	"Numerical Methods: For Engineering and Science", Saumyen Guha and Rajesh Srivastava, OXFORD UNIVERSITY PRESS, 1st Ed. (January 1, 2010), ISBN-13: 978-0195693485.	No
Websites	https://users.cs.utah.edu/~jeffp/teaching/cs3130.html	

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 – 100	Outstanding Performance
	B - Very Good	جيد جدا	80 – 89	Above average with some errors
	C - Good	جيد	70 – 79	Sound work with notable errors
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	F – Fail	راسب	(0-44)	Considerable amount of work required

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

العميد	**رئيس القسم**	**أستاذ المادة**
أ . د . هارون عبد الكاظم شهد	**م.د. حيدر كريم مظهر**	**م.م. أحمد نايف**

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**The crimes of the Ba'ath regime in Iraq**			**Module Delivery**	
Module Type	**Support or related learning activity**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**MTU1007**				
ECTS Credits	**2**				
SWL (hr/sem)	**50**				
Module Level	2		**Semester of Delivery**	3	
Administering Department	CSTE		**College**	EETC	
Module Leader	عمار حسين ترف		**e-mail**		
Module Leader's Acad. Title	Assistant Lecturer		**Module Leader's Qualification**	M.Sc.	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date			**Version Number**	1.0	

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

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Aims أهداف المادة الدراسية	يهدف هذا المقرر الدراسي إلى تعزيز فهم الطلاب للجرائم والانتهاكات التي وقعت خلال فترة نظام البعث في العراق وتأثيراتها على الأفراد والمجتمع، وتشجيع التحليل والنقاش حول هذه القضايا المهمة. ومن ابرز الأهداف للمادة الدراسة، أن يكون الطالب قادرًا على أن: 1. فهم مفهوم الجرائم وأقسامها. 2. دراسة جرائم نظام البعث والقوانين المتعلقة بها. 3. التعرف على الجرائم النفسية والاجتماعية وآثارها على الفرد والمجتمع. 4. تحليل الانتهاكات القانونية في العراق، بما في ذلك الانتهاكات لحقوق الإنسان والجرائم ذات الصلة. 5. فهم الجرائم البيئية وآثارها، بما في ذلك التلوث وتدمير المدن والقرى وتجفيف الأهوار. 6. دراسة جرائم المقابر الجماعية وفهم أحداث المقابر والتصنيف الزمني لها في العراق.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	مخرجات التعلم للمادة الدراسية. 1. فهم مفهوم الجرائم وقدرة الطلاب على تصنيف الجرائم وفقًا لأقسامها. 2. تحليل جرائم نظام البعث وفهم القوانين المتعلقة بها، بما في ذلك الجرائم الدولية. 3. القدرة على التعرف على الجرائم النفسية لنظام البعث وفهم الآثار النفسية لجرائم نظام البعث على الأفراد والمجتمع. 4. القدرة على التعرف على الجرائم الاجتماعية لنظام البعث الآثار الاجتماعية لجرائم نظام البعث على الأفراد والمجتمع. 5. التعرف على الانتهاكات السياسية والعسكرية لنظام البعث 6. فهم الجرائم البيئية لنظام البعث والقدرة على تحليل تأثيرتها على البيئة والمجتمع 7. دراسة جرائم المقابر الجماعية لنظام البعث 8. فهم الأحداث المرتبطة بجرائم المقابر الجماعية وتصنيفها زمنيًا.
Indicative Contents المحتويات الإرشادية	1. تعريف الجريمة لغة واصطلاحًا، مفهوم الجريمة، اقسام الجريمة 2. جرائم نظام البعث وفق توثيق قانون المحكمة الجنائية العراقية العليا عام 2005 3. الجرائم النفسية والاجتماعية وأثارها 4. عسكرة المجتمع، موقف النظام البعثي من الدين 5. انتهاكات القوانين العراقية، صور انتهاكات حقوق الإنسان وجرائم السلطة 6. بعض قرارات الانتهاكات السياسية والعسكرية لنظام البعث 7. أماكن السجون والاحتجاز لنظام البعث 8. الجرائم البيئية لنظام البعث 9. جرائم المقابر الجماعية

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	1. التفاعل النشط: يتم تشجيع الطلاب على المشاركة والمشاركة الفعالة الدروس من خلال المناقشات الجماعية والأنشطة التفاعلية. 2. التنويع و وسائل التواصل: يتم استخدام مجموعة متنوعة من وسائل التواصل والتعليم، مثل المحاضرات التوضيحية، والمناقشات الجماعية، والأنشطة العملية، والعروض التقديمية، لتلبية احتياجات وأساليب التعلم المختلفة للطلاب.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	32	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيًا	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	18	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيًا	2
Total SWL (h/sem) الحمل الدراس الكلى للطالب خلال الفصل	50		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري		
الأسبوع الأول	تعريف الجريمة لغة واصطلاحًا، مفهوم الجريمة، اقسام الجريمة	
الأسبوع الثـــاني	جرائم نظام البعث وفق توثيق قانون المحكمة الجنائية العراقية العليا عام 2005	
الاسبوع الثـــالث	الجرائم النفسية لنظام البعث وفهم الآثار النفسية لجرائم نظام البعث على الأفراد والمجتمع.	
الأسبوع الـــرابـع	الجرائم الاجتماعية لنظام البعث وفهم الآثار الاجتماعية لجرائم نظام البعث على الأفراد والمجتمع.	
الأسبوع الخـــامس	انتهاكات القوانين العراقية	
الأسبوع الســـادس	بعض قرارات الانتهاكات السياسية والعسكرية لنظام البعث	
الأسبوع الســـابع	امتحان نصف الفصل	
الأسبوع الثـــامن	الجرائم البيئية لنظام البعث في العراق (التلوث الحربي وسياسة الأرض المحروقة)	
الأسبوع التاسع والعاشر	تجفيف الاهوار و تجريف بساتين النخيل والأشجار والمزروعات	
الاسبوع الحادي عشر و الاسبوع الثاني عشر	جرائم المقابر الجماعة واحداث مقابر الإبادة الجماعية المرتكبة من النظام البعث في العراق	
الأسبوع الثالث عشر والرابـع عشرو الخامس عشر	التصنيف الزمني لمقابر الإبادة الجماعية في العراق للمدة من (1963-2003) م	
الأسبوع السادس عشر	التهيئة للامتحان النهائي	

Module Evaluation
تقييم المادة الدراسية

		Time/ Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	3	15% (15)	3, 7, 11	LO #1, 5, 8
	Assignments	3	15% (15)	2, 6, 13	LO # 2, 4, 9
	Projects / Lab.				
	Report	1	10% (10)	14	LO # 1-10
Summative assessment	Midterm Exam	2 hours	10% (20)	7	LO # 1-5
	Final Exam	3 hours	50% (50)	16	All
Total assessment			100% (100 Marks)		

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	منهاج وزارة التعليم العالي والبحث العلمي العراقية - جرائم نظام البعث في العراق 2023	Yes
Recommended Texts		No
Websites	The Collage E-Library	

Grading Scheme
مخطط الدرجات

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

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

Type text h

أستاذ المادة	رئيس القسم	العميد
م.م. عمار حسين ترف	م.د. حيدر كريم مظهر	أ . د . هارون عبد الكاظم شهد

5MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Numerical Analysis & Statistics**			**Module Delivery**	
Module Type	**Basic learning activities**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☒**Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CSTE2201**				
ECTS Credits	**4**				
SWL (hr/sem)	**100**				
Module Level	2		**Semester of Delivery**	4	
Administering Department	CSTE		**College**	EECT	
Module Leader	Ahmed Naif Hadi		**e-mail**	eng.ahmednaif@gmail.com	
Module Leader's Acad. Title			**Module Leader's Qualification**		
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date			**Version Number**	1.0	

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	1. To develop problem-solving skills and understanding of probability theory. 2. To distinguish aspects of probability terminology. 3. This course deals with Numerical Methods. 4. To understand Numerical Differentiation and Integration. 5. To perform Numerical Solution of Ordinary Differential Equations.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Recognize Basic terminology and Axioms for probability. 2. Discuss Conditional probabilities and independent events. 3. Explain random variables, Expectations, and variance. 4. Understand Bayes Theorem, PDF and CDF, Expectation, and variance of continuous random variables. 5. Define Binomial, Poisson, and Normal Distribution. 6. Discuss Joint and Marginal distribution aspects. 7. Discuss the Distributions of sums of independent random variables. 8. Explain the Expectation and variance of sums of random variables, in addition to Covariance and correlation, also Conditional expectation and Prediction. 9. Describe Numerical Analysis. Error Analysis. 10. Discuss Numerical Methods for Non-Linear Equations. 11. Get acquainted with Interpolation and Polynomial Approximation. 12. Explain the Significance of Numerical Differentiation Formulas. 13. Describe Numerical Integration and Quadrature Methods. 14. Explain the Numerical Solution of Ordinary Differential Equations. 15. Define the Numerical Solution of Boundary Differential Equations.
Indicative Contents المحتويات الإرشادية	Part A - Probability This part includes Sample spaces and events. Axioms for probability and their consequences. Conditional probabilities. Bayes' formula. Independent events. Definition of a random variable. Discrete random variables. Expectation and variance. Bayes Theorem, Discrete Probability Distributions, The cumulative distribution function. Probability density function. Expectation and variance of continuous random variables. Binomial Distribution, Poisson Distribution, Normal Distribution, Joint distribution functions. Marginal distributions. Independent random variables. Distribution of sums of independent random variables. Expectation and variance of sums of random variables. Covariance and correlation. Conditional expectation. Prediction. [30 hrs] + Revision problem classes in weekly tutorials [8 hrs] Part B – Numerical Analysis This part will take in details Numerical Analysis. Error Analysis. Numerical Methods for Non-Linear Equations: Newton-Raphson Method. Interpolation and Polynomial Approximation: Lagrange interpolation polynomial, Newton polynomial. Numerical Differentiation Formulas: Central Formula, Forward and Backward Formula. Numerical Integration and Quadrature Methods: Trapezoidal Method, Simpson's Method Numerical Solution of Ordinary Differential Equations: Taylor Method, Euler Method,

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

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

Student Workload (SWL)
الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	48	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	52	**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**	2	20% (20)	5, 10	LO # 1, 2, 10 and 11
	Assignments	2	20% (20)	3, 11	LO # 3, 4, 6 and 7
	Projects / Lab.	N/A			
	Report	N/A			
Summative assessment	**Midterm Exam**	2hr	10% (10)	8	LO # 1-7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	Populations and Samples. Sample spaces and events. Axioms for probability and their consequences.
Week 2	Conditional probabilities. Bayes' formula. Independent events. Definition of random variable. Discrete random variables. Expectation and variance.
Week 3	Bayes Theorem, Discrete Probability Distributions, The cumulative distribution function.
Week 4	robability density function. Expectation and variance of continuous random variables. Binomial Distribution, Poisson Distribution, The Normal Distribution.

Week 5	Joint distribution functions. Marginal distributions.
Week 6	Independent random variables. Distributions of sums of independent random variables.
Week 7	Expectation and variance of sums of random variables. Covariance and correlation. Conditional expectation. Prediction..
Week 8	Midterm
Week 9	Introduction to Numerical Analysis. Error Analysis.
Week 10	Numerical Methods for Non-Linear Equations: Newton-Raphson Method.
Week 11	Interpolation and Polynomial Approximation: Lagrange interpolation polynomial, Newton polynomial.
Week 12	Numerical Differentiation Formulas: Central Formula, Forward and Backward Formula.
Week 13	Numerical Integration and Quadrature Methods: Trapezoidal Method, Simpson's Method
Week 14	Numerical Solution of Ordinary Differential Equations: Taylor Method, Euler Method, Runga Kutta Methods
Week 15	Numerical Solution of Boundary Differential Equations.
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Tutorial)

المنهاج الاسبوعي الاضافي

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

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	**Available in the Library?**
Required Texts	"Probability & Statistics for Engineers & Scientists", Ronald E. Walpole, Raymond H. Myers, Sharon L. Myers, Keying E. Ye, Pearson Education, 9th edition, (August 19, 2016), ISBN-13: 978-1292161365.	Yes
Recommended Texts	"Numerical Methods: For Engineering and Science", Saumyen Guha and Rajesh Srivastava, OXFORD UNIVERSITY PRESS, 1st Ed. (January 1, 2010), ISBN-13: 978-0195693485.	No
Websites	https://users.cs.utah.edu/~jeffp/teaching/cs3130.html	

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

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

العميد	**رئيس القسم**	**أستاذ المادة**
أ . د . هارون عبد الكاظم شهد	**م.د. حيدر كريم مظهر**	**م.م. أحمد نايف**

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Object Oriented Programming**			**Module Delivery**	
Module Type	**Basic learning activities**			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CSTE2202**				
ECTS Credits	**5**				
SWL (hr/sem)	**125**				
Module Level	2		**Semester of Delivery**	4	
Administering Department	CSTE		**College**	EETC	
Module Leader	Zainab Fadhil Abbas		**e-mail**	zainab.fadhil@hilla-unc.edu.iq	
Module Leader's Acad. Title	Asst. Lec.		**Module Leader's Qualification**	MS.C	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date			**Version Number**	1.0	

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

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Aims أهداف المادة الدراسية	1. Understand and apply object-oriented programming principles. 2. Design and implement object-oriented solutions to programming problems. 3. Utilize libraries and frameworks for application development. 4. Implement data abstraction and encapsulation for secure and efficient code. 5. Plan and execute testing strategies for reliable programs. 6. Debug and optimize program performance for efficient execution.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Demonstrate a clear understanding of object-oriented programming principles, including inheritance, polymorphism, and encapsulation. 2. Design and implement classes and objects to represent real-world entities, defining methods, applying appropriate inheritance and encapsulation. 3. Utilize libraries and frameworks effectively to develop robust and scalable applications. 4. Implement data abstraction and encapsulation techniques to ensure secure and efficient code. 5. Plan and execute comprehensive testing strategies to validate the functionality and reliability of object-oriented programs. 6. Identify and debug program errors using appropriate tools and techniques, enhancing program robustness. 7. Evaluate and optimize program performance through code analysis and profiling, improving execution efficiency. 8. Collaborate effectively with peers to develop object-oriented solutions to complex programming challenges. 9. Apply exception handling techniques to handle errors and ensure program stability. 10. Demonstrate proficiency in utilizing debugging tools to identify and fix program errors. 11. Apply object-oriented design patterns and principles to analyze and solve programming problems. 12. Evaluate the efficiency and effectiveness of object-oriented solutions through critical analysis and optimization techniques.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. <u>Part A: Introduction to Object-Oriented Programming (8 hours)</u> - Overview of object-oriented programming principles and concepts - Classes, objects, and their relationships - Inheritance and polymorphism - Encapsulation and data abstraction

	Part B: Designing Object-Oriented Solutions (12 hours) - Problem analysis and requirements gathering - Identifying classes and objects - Object-oriented design principles and patterns - Designing class hierarchies and relationships - UML diagrams for visualizing designs Part C: Implementing Object-Oriented Solutions (20 hours) - Language essentials for object-oriented programming - Implementing classes and objects - Inheritance and polymorphism - Handling exceptions - Utilizing libraries and frameworks Part D: Testing and Debugging Object-Oriented Programs (12 hours) - Testing methodologies and strategies - Unit testing and test-driven development - Integration testing and system testing - Debugging techniques and tools - Error handling and exception management Part E: Optimization and Performance Analysis (8 hours) - Profiling and performance analysis tools - Identifying performance bottlenecks - Optimization techniques for object-oriented programs - Memory management and resource optimization Part F: Collaborative Object-Oriented Programming (8 hours) - Collaborative development environments and version control systems - Code reviews and best practices - Pair programming and team collaboration - Communication and coordination in object-oriented projects Part G: Project Work and Application Development (20 hours) - Applying object-oriented principles and techniques in a practical project - Developing a complete application and object-oriented design - Project planning, implementation, and documentation - Integration of various modules and testing the application

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The learning and teaching strategies for the Object-Oriented Programming Course include lectures to introduce concepts, practical exercises for hands-on programming, group discussions for collaboration, case studies for real-world application, code reviews for feedback, practical projects to apply knowledge, guest lectures for industry insights, online resources for self-study, assessments to evaluate understanding, and presentations to enhance communication skills. These strategies aim to actively engage students, develop their programming abilities, and foster a deep understanding of object-oriented programming principles.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	79	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	46	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	5
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	5, 10	LO #1, 2, 4; 8, 9, and 10
	Assignments	1	5% (5)	8	LO # 3, 6 and 7
	Projects / Lab.	1	15% (15)	Continuous	
	Report	1	10% (10)	13	All
Summative assessment	**Midterm Exam**	2 hrs.	10% (10)	7	LO # 1-7
	Final Exam	4hrs.	50% (40 + 10)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction to Object-Oriented Programming (OOP)
Week 2	Language Essentials and Advanced Topics.
Week 3	Classes, Objects, and defining Methods.
Week 4	Inheritance.
Week 5	Polymorphism.
Week 6	Encapsulation and Data Abstraction.
Week 7	Problem Analysis and Requirements Gathering **+ Mid-term Exam.**
Week 8	Object-Oriented Design Principles and Patterns.
Week 9	More on Implementing Classes and Objects as code.
Week 10	More on Implementing Inheritance and Polymorphism as code.
Week 11	Handling Exceptions / Debugging Techniques and Tools.
Week 12	Utilizing Libraries and Frameworks / Optimization and Performance Analysis.
Week 13	Testing Methodologies and Strategies.
Week 14	Discussion and presenting of final project work (and delivering it as a report).
Week 15	**Preparatory week before the final Exam.**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Introduction to the programming language environment and basic syntax.
Week 2	Variables
Week 3	Control statements: Making Decisions
Week 4	Control statements: Loops
Week 5	Implementing simple classes and objects.
Week 6	Experimenting with inheritance _1
Week 7	Experimenting with inheritance _2
Week 8	Experimenting with Polymorphism _1
Week 9	Experimenting with Polymorphism _2

Week 10	Data Abstraction.
Week 11	Data Encapsulation.
Week 12	Designing Patterns.
Week 13	Data Structures.
Week 14	Other related OOP principles.
Week 15	Discussion and presentation of final project work.

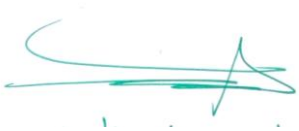
Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	- Resources **depend** on which Programming Language that will be taught in this Module. - Object-Oriented Thought Process, The (Developer's Library) 5th Edition, by Matt Weisfeld.	
Recommended Texts	- Resources **depend** on which Programming Language that will be taught in this Module, you can choose between: - C++ Programming: From Problem Analysis to Program Design, by D. S. Malik. - Java: The Complete Reference, Tenth Edition (Complete Reference Series) by Herbert Schildt. - Introducing Python: Modern Computing in Simple Packages 2nd Edition by Bill Lubanovic.	
Websites	*https://www.geeksforgeeks.org*	

Grading Scheme
مخطط الدرجات

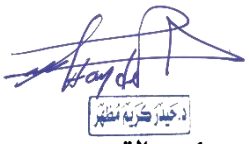
Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings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

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



العميد

أ . د . هارون عبد الكاظم شهد



رئيس القسم

م.د. حيدر كريم مظهر

أستاذ المادة

م.م. زينب فاضل عباس

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Microprocessors**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CSTE2203**				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level	2		**Semester of Delivery**	4	
Administering Department	CSTE		**College**	EETC	
Module Leader	Baseem Adnan Altwajre		**e-mail**	baseem.adnan@hilla-unc.edu.iq	
Module Leader's Acad. Title	Asst. Lec.		**Module Leader's Qualification**	Msc.	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date			**Version Number**		

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	**CSTE2104 - Computer Organization & Architecture**	**Semester**	3
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Aims أهداف المادة الدراسية	1. Identify the 8086 microprocessors, its internal structure, its signals and its features. 2. Understanding and defining the 8086 processor registers, memory segmentation and their characteristics. 3. To encode programs based on the specific processor language. 4. 4. To solve problems encountered in the architecture of a specific microprocessor.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Identify the basic characteristics of a specific processor and microprocessors evolution. 2. Explain the types of 8086 Registers and its specifications. 3. Understanding memory segmentation, logical address, and physical address. 4. List the addressing mode of the 8086 processor instruction and its specification. 5. Understanding Hardware Organization of the Memory Address Space. 6. Encode different programs based on assembly. 7. Perform programs with data transfer instructions and stack area. 8. Perform different arithmetic and logical operations using the processor instruction set. 9. Encode different problems associated with branching instructions. 10. Encode different problems associated with loop, shift, and rotate instructions. 11. Identify Interrupt concept and types.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. <u>Part A – Microprocessor H/W architecture</u> MP architecture, MP Registers, Memory segmentation, Addressing modes, Hardware Organization of the Memory Address Space [25hrs] <u>Part b – Microprocessor S/W architecture</u> Instruction set, data transfer, arithmetic, logical. [16 hrs] Stack register and stack area [8 hrs] Branching, loop, shift instructions and applications [16 hrs] Rotate instructions, interrupt concept and types [6 hrs]

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

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

Student Workload (SWL)
الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	94	**Structured SWL (h/w)** الحمل ا الدراسي المنتظم للطالب أسبوعيا	6
Unstructured SWL (h/sem) الحمل الدراسي غيرالمنتظم للطالب خلال الفصل	56	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	10% (10)	4, 10	LO #1- 6, 8-11
	Assignments	2	10% (10)	6, 13	
	Projects / Lab.	5	10% (10)	Continuous	
	Report	1	10% (10)	7,10	LO #1- 6, 8-11
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	4 hr	50% (40 + 10)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
Week	**Material Covered**
Week 1	Introduction to 8086 microprocessor and microprocessors evolution
Week 2	Types of 8086 Registers and its specifications
Week 3	Memory Segmentation, logical address, and physical address
Week 4	Addressing modes: Register Addressing Mode, Immediate Addressing Mode, Direct Addressing Mode, Register Indirect Addressing Mode
Week 5	Based Addressing Mode, Indexed Addressing Mode, Based Indexed Addressing Mode, String Addressing Mode, Port Address Model
Week 6	Hardware Organization of the Memory Address Space
Week 7	**Mid Term Exam**
Week 8	Introduction to 8086 microprocessor assembly language
Week 9	Data transfer instructions and stack area
Week 10	Arithmetic instructions
Week 11	logical instructions
Week 12	Branching instructions
Week 13	Loop instructions
Week 14	Shift and Rotate instructions
Week 15	Interrupt concepts and types
Week 16	**Preparatory week before the Final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
Week	**Material Covered**
Week 1	Lab 1: Introduction to debug: entering and exiting debug, Examining and altering the contents of registers
Week 2	Lab 2: Coding and running programs in debug
Week 3	Lab 3: Data manipulation in debug, examining the stack in debug
Week 4	Lab 4: Data transfer and Arithmetic instructions

Week 5	Lab 5: logical instructions
Week 6	Lab 6: Branching, Shift, and Rotate instructions.
Week 7	Lab 7: Loop instructions.

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	The 80x86 IBM PC and Compatible Computers by Mohammed ali mazidi	Yes
Recommended Texts	UNDERSTANDING 8085/8086 MICROPROCESSORS and PERIPHERAL ICs	no
Websites	https://www.udemy.com/course/8086-microprocessor	

Grading Scheme
مخطط الدرجات

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

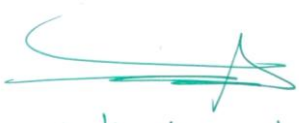
Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original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

أستاذ المادة

م.م. بسيم عدنان ناظم

رئيس القسم

م.د. حيدر كريم مظهر



العميد

أ . د . هارون عبد الكاظم شهد

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Communication Fundamentals**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CSTE2204**				
ECTS Credits	5				
SWL (hr/sem)	125				
Module Level	2		**Semester of Delivery**	4	
Administering Department	CSTE		**College**	EETC	
Module Leader	Ahmed naif hadi		**e-mail**	eng.ahmednaif1@gmail.com	
Module Leader's Acad. Title			**Module Leader's Qualification**		
Module Tutor			**e-mail**	E-mail	
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date			**Version Number**	1.0	

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	The Communication Fundamentals course aims to provide students with the knowledge and skills necessary to understand, design, and work with basic communication systems and signals, laying the groundwork for more advanced study and practical application in communication engineering.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Understand the basic Principles of Communication system. 2. Understand the basic principles of signals and their types. 3. Recognize Basic Principles of modulation and demodulation and its needs. 4. Identify Amplitude Modulation, Percent Modulation, Upper and Lower Sidebands. 5. Discuss forms of Amplitude Modulation and Methods of Amplitude Modulation. 6. Describe the Power Relation in an AM Wave. 7. Identify modulating Amplifier Circuit: AM- Transmitter & Radio Receiver Essential Parameter. 8. Explain the AM generation of SSB, DSB-SC balanced modulators (Cowan &Ring). 9. Identify the Frequency Modulation Process: Modulation Index, Deviation Ratio, Percent Modulation, and FM Sidebands. 10. List the various types of generation of FM (the direct method and indirect method) & demodulation or detection. 11. Explain the Phase modulation (PM) Definition. 12. Understand the basic principles and methods of digital modulations and coding.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. **Part 1:** Basic principles of communication, Introduction to Communication, The Block Diagram of a Communication System **Part 2:** MODULATION AND DEMODULATION: Need for Modulation, Define a Carrier Wave, Radio Frequency Spectrum, Sound, and Radio Broadcasting. **Part 3** Amplitude Modulation: Percent Modulation, Upper and Lower Sidebands, Methods of Modulation, Mathematical Analysis of a Modulated Carrier Wave, forms of Amplitude Modulation and Methods of Amplitude Modulation, Power Relation in an AM Wave. The AM generation of SSB, DSB-SC balanced modulators (Cowan &Ring), demodulation type of AM Signal: AM-Detector (Envelope & Synchronous). **Part 4** Frequency Modulation Process: Modulation Index, Deviation Ratio, Percent Modulation and FM Sidebands, the relationship between the modulation index and number of sidebands, generation of FM (the direct method and indirect method) & demodulation or detection, the comparison between AM and FM, FM Receiver: FM Discriminator (Foster –Seeley &Ratio Detector), the Phase modulation (PM) Definition and the PM equation and PM waveforms.

	Part 5 Introduction to digital communication system and digital modulation and coding techniques.

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

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	79	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	46	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	5
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	5	15% (15)	Continuous	
	Report	1	5% (5)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-6
	Final Exam	4 hr	50% (40 + 10)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Basic Principles of Communication: Introduction to Communication, The Block Diagram of a Communication System
Week 2	Signals: Principles of Signals & Definition, Difference between Analog and Digital Signals
Week 3	Introduction to Modulation and Demodulation
Week 4	Modulation needs and methods
Week 5	Amplitude Modulation, Percent Modulation, Upper and Lower Sidebands.
Week 6	Mathematical Analysis of a Modulated Carrier Wave, Power Relation in an AM Wave,
Week 7	**Mid Term Exam**
Week 8	Modulating Amplifier Circuit: AM- Transmitter
Week 9	Radio Receiver Essential Parameter
Week 10	Generation of SSB, DSB-SC Balanced Modulators :(Cowan & Ring) Demodulation of AM Signal: AM-Detector (Envelope & Synchronous
Week 11	Frequency Modulation: Modulation Index, Deviation Ratio, Percent Modulation, FM Sidebands FM Receiver: FM Discriminator (Foster –Seeley &Ratio Detector).
Week 12	FM Generation (Direct& Indirect Method)
Week 13	Phase Modulation (PM) Definition
Week 14	Introduction to Digital modulation and digital coding.
Week 15	Pulse width and Pulse Position Modulation (PWM & PPM).
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: MODULATION AND DEMODULATION Process
Week 2	Lab 2: Methods of Amplitude Modulation, calculating the time-frequency and carrier wave
Week 3	Lab 3: Index Modulation and Percent Modulation, Upper and Lower Side bands, power content of AM
Week 4	Lab 4: Modulation and DE-modulation wave of AM
Week 5	Lab 5: Frequency Modulation Process calculating the maximum and minimum frequency and carrier frequency
Week 6	Lab 6: Modulation and DE-modulation wave of FM
Week 7	Lab 7: ASK, FSK, and PSK Modulation

Week 8	Lab 8: Pulse Width Modulation PWM

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

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

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Principles of Communication Systems By J.S.Chitode, First Edition-2007 Modern Digital and Analog Communication Systems ,By B.P.Lathi OXFORD	Yes
Recommended Texts	Analog and Digital Communications, By Schaum Second Edition Data Communications and Networking, By Behrouz A. Forouzan, Fifth Edition	No
Websites		

أستاذ المادة

م.م. أحمد نايف

رئيس القسم

م.د. حيدر كريم مظهر

العميد

أ . د . هارون عبد الكاظم شهد

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Introduction to Database -SQL**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CSTE2205**				
ECTS Credits	6				
SWL (hr/sem)	**150**				
Module Level	2		**Semester of Delivery**	4	
Administering Department	**CSTE**		**College**	EETC	
Module Leader	Suhub ahmed malik		**e-mail**	Shuhba25@gmail.com	
Module Leader's Acad. Title	Asst. Lec.		**Module Leader's Qualification**	MS.C	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date			**Version Number**	1.0	

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

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Aims أهداف المادة الدراسية	1. To learn the theory of the database. 2. To understand The Entity Relationship Model. 3. To Introduce SQL and SQL and relational database concepts. 4. To understand the Constraints imposed in a database. 5. Learn about Boolean Operators in SQL. 6. Learn about Normalization of a database. Learn about Storage and Query Processing, transaction, and recovery.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. To learn the theory of the database. 2. To understand The Entity Relationship Model. 3. To Introduce SQL and SQL and relational database concepts. 4. To understand the Constraints imposed in a database. 5. Learn about Boolean Operators in SQL. 6. Learn about Normalization of a database. Learn about Storage and Query Processing, transaction, and recovery.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Part-A [15 Hrs] Introduction to the theory: What is the benefit of using a database versus a shared file system? What is Data models and the relational database system? Data independence versus data-dependent data and how a database addresses these two issues. The Three-level Architecture and why it is necessary. What are the characteristics of each of these levels and the role of the database administrator in establishing the separation of these levels? What is database management systems, its components and how they work together? Part-B [15 Hrs] The Entity Relationship Model: ER diagrams, resolution of M:N relationships, and Table Instance Charts (TICs). Translations of TICs into relational tables. Introduction to SQL and relational database concepts: Relations and attributes. Candidate and primary keys. Foreign keys and why they are necessary. Introduction to relational operators and how they are applied. Creating and deleting tables. Constraints imposed in a database: Updating and deleting rows in a table using the UPDATE TABLE, DELETE TABLE, and the DROP TABLE command with and without constraints. Implementation of the Selection and Projection operators. Ordering the results of a table according to a given attribute in ascending or descending orders.

	Part-C [15 Hrs] Boolean Operators in SQL: pattern matching using the LIKE clause, % and underscore characters. Arithmetic Operations and use of built-in functions in SQL. Introduction to Group functions using the Group by clause and additional built in functions. Processing dates and time and basic arithmetic with dates. Formatting of dates and times. Normalization of a database.: First, second and third normal forms. How to detect anomalies and use of the Armstrong's axioms for determining functional dependencies. Importance of normalizing a database and the types of anomalies that may be encountered in First, Second, and Third Normal Forms. How to recognize, prevent, and how to get rid of anomalies in these forms. Part-D [15 hrs] Continuation of the normalization process: BCNF form and Dependency preservation. Algorithms to ensure dependency preservation. The Join operator and its different types. Advantages and disadvantages of higher normal forms from an operational point of view. Storage and Query Processing: RAID, Storage access, indexing and hashing, query processing and query optimization. Part-E [3] [10] Transaction Management and concurrency control: Transactions (concepts, state) and concurrency control (methods). Database Recovery: Concept and Recovery Techniques

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted in delivering this module focuses on fostering active student engagement during exercises, fostering the development of critical thinking skills, and encouraging participation. This will be accomplished through a combination of classroom instruction, interactive tutorials, and the inclusion of engaging experiments that involve sampling activities that capture students' interest. The aim is to refine and enhance students' critical thinking abilities while ensuring their active involvement in the learning process.
Student Workload (SWL)	

الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	94	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	56	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	10% (10)	6, 10	LO #3,4 , LO #7, 8
	Assignments	2	10% (10)	8, 13	LO # 6, 9, 10, 11 and 12
	Projects / Lab.	5	15% (15)	Continuous	
	Report	1	5% (5)	14	LO # 10, 11, 12 and 13
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-6
	Final Exam	4hr	50% (40+ 10)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	**Introduction to the theory:** What is the benefit of using a database versus a shared file system? What is Data models and the relational database system? Data independence versus data-dependent data and how a database addresses these two issues. The Three-level Architecture and why it is necessary. What are the characteristics of each of these levels and the role of the database administrator in establishing the separation of these levels? What is database management systems, its components and how they work together?
Week 2	
Week 3	**The Entity Relationship Model:** ER diagrams, resolution of M:N relationships, and Table Instance Charts (TICs). Translations of TICs into relational tables.
Week 4	**Introduction to SQL and relational database concepts**: Relations and attributes. Candidate and primary keys. Foreign keys and why they are necessary. Introduction to relational operators and how they are applied. Creating and deleting tables.
Week 5	
Week 6	**Constraints imposed in a database:** Updating and deleting rows in a table using the UPDATE TABLE, DELETE TABLE, and the DROP TABLE command with and without constraints. Implementation of the Selection and Projection operators. Ordering the results of a table according to a given attribute in ascending or descending orders.
Week 7	
Week 8	**Boolean Operators in SQL:** pattern matching using the LIKE clause, % and underscore characters. Arithmetic Operations and use of built-in functions in SQL. Introduction to Group functions using the Group by clause and additional built in functions. Processing dates and time and basic arithmetic with dates. Formatting of dates and times.
Week 9	
Week 10	**Normalization of a database.:** First, second and third normal forms. How to detect anomalies and use of the Armstrong's axioms for determining functional dependencies. Importance of normalizing a database and the types of anomalies that may be encountered in First, Second, and Third Normal Forms. How to recognize, prevent, and how to get rid of anomalies in these forms**.**
Week 11	**Continuation of the normalization process:** BCNF form and Dependency preservation. Algorithms to ensure dependency preservation. The Join operator and its different types. Advantages and disadvantages of higher normal forms from an operational point of view, join algorithm types.
Week 12	**Storage and Query Processing:** RAID, Storage access, indexing and hashing, query processing and query optimization.
Week 13	**Transaction Management and concurrency control:** Transactions (concepts, state) and concurrency control (methods).
Week 14	**Database Recovery:** Concept and Recovery Techniques
Week 15	**Non-Relational Database systems:** Document, Key-value, Column, Graph.
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	An Overview of Database and SQL Query language: Introduction to PHP and MySQL, Setup steps, HTML Review Form Handling
Week 2	Basic PHP syntax, Comments, outputs
Week 3	Arithmetic and variable operation
Week 4	PHP: control statements, Loops, and Arrays
Week 5	Creating Database, tables in SQL
Week 6	Attribute Data Types and Domains in SQL
Week 7	The Entity Relationship (ER) Model: Drawing and converting entities with a relationship to relation Table
Week 8	SQL Server Constraints, Select, Inserting to Data from Database
Week 9	Updating, Deleting, ordered By Data from Database
Week 10	Group Functions: AVG, MIN, MAX, SUM
Week 11	Join in SQL Server
Week 12	View data from Database
Week 13	Nested sub-queries
Week 14 & 15	Complete web application using PHP and MySQL

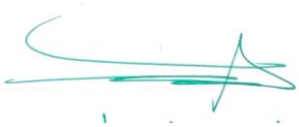
Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Book#1: C. J. Date, “Introduction to Database Systems”, 8th Ed. Publisher: Addison-Wesley, 2003 Book#2: Ramez Elmasri, Shamkant B. Navathe, " Fundamentals of Database Systems",7th Ed. Publisher: Pearson, 2016.	NO
Supporting Texts	Reference#1: A. Silberschatz, H. F.Korth, and S. Sudarshan, “Database System Concepts", 5th Ed. McGraw-Hill (2006). 1. Reference#2: Database Systems the Complete Book by H. Garcia-Molina and et al. Prentice Hall; 2nd Edition	No

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

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



العميد

أ . د . هارون عبد الكاظم شهد

رئيس القسم

م.د. حيدر كريم مظهر

أستاذ المادة

م.م. شهب احمد مالك

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**English Language (Intermediate)**			**Module Delivery**	
Module Type	**Support or related learning activity**			☒ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**MTU1003**				
ECTS Credits	**2**				
SWL (hr/sem)	**50**				
Module Level		2	**Semester of Delivery**		4
Administering Department		CSTE	**College**	EETC	
Module Leader	Qamar Dhiya Rafeeq Mirjan		**e-mail**	q8602037@gmail.com	
Module Leader's Acad. Title			**Module Leader's Qualification**		
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date			**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	**CSTE1206 - English Language (Beginner Level)**	**Semester**	2
Co-requisites module	None	**Semester**	

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

Module Aims أهداف المادة الدراسية	The module aims of English Language (Intermediate) are designed to help learners at the beginner level develop their English language skills and achieve specific learning objectives. While I don't have access to the specific module aims of this coursebook, I can provide you with a general outline of the typical aims for a beginner-level English course: 1. To introduce beginner-level learners to the English language, focusing on building vocabulary and acquiring essential language structures. 2. To develop listening and speaking skills through interactive activities and engaging in basic conversational practice. 3. To enhance reading comprehension abilities by introducing simple texts and emphasizing vocabulary and sentence structures. 4. To provide foundational writing skills, including sentence formation, paragraph writing, and completing basic forms. 5. To cultivate cultural awareness and equip learners with practical language skills for everyday situations, such as ordering food, shopping, and asking for directions.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	The module learning outcomes for the English Language (Beginner) module are as follows: 1. Develop basic proficiency in listening and understanding spoken English at a beginner level. 2. Demonstrate improved speaking skills by participating in simple conversations and expressing basic ideas and opinions. 3. Comprehend and interpret basic written texts, including short passages and simple dialogues. 4. Produce written texts using basic grammatical structures and vocabulary appropriate for beginner-level communication. 5. Increase vocabulary knowledge and usage to effectively communicate in everyday situations. 6. Develop an awareness of cultural aspects related to English-speaking countries and demonstrate cross-cultural understanding in language use. 7. Apply basic language skills in practical situations, such as greetings, introductions, making requests, and asking for and giving simple directions.
Indicative Contents المحتويات الإرشادية	1. There is no place like home. [3 hrs.] 2. Reading and speaking. [3 hrs.] 3. Writing and speaking. [3 hrs.] 4. Been there, done that.[3 hrs.] 5. Reading. [3 hrs.] 6. What happened, was there. [3 hrs.] 7. Reading & listening. [3 hrs.] 8. Speaking. [3 hrs.] 9. whatever will be, will be. [3 hrs.] 10. Reading & speaking. [3 hrs.] 11. people places and things. [3 hrs.] 12. Reading &speaking. [3 hrs.] 13. How to write resume applying for a job. [3 hrs.]

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	The learning and teaching strategies for the English Language (Beginner) module may include: 1. Interactive Language Practice: Engage learners in communicative activities that promote active participation and language practice. This can include pair work, group discussions, role-plays, and language games. 2. Authentic Materials: Incorporate authentic materials such as videos, audio recordings, and reading texts that reflect real-life language use. This helps learners develop their listening, speaking, reading, and writing skills in authentic contexts. 3. Task-Based Learning: Design tasks and projects that require learners to use the target language to accomplish specific goals or solve problems. This promotes meaningful language use and encourages critical thinking and problem-solving skills. 4. Visual Aids and Multimedia: Utilize visual aids, charts, diagrams, and multimedia resources to support language learning and comprehension. Visuals can enhance understanding, aid in vocabulary acquisition, and provide context for language use. 5. Error Correction and Feedback: Provide timely and constructive feedback on learners' language production to help them identify and correct errors. Encourage self-correction and peer correction to foster a supportive learning environment.

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

Structured SWL (h/sem) الحمل الدراس المنتظم للطالب خلال الفصل	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	17	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	1
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	50		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	3	15% (15)	5, 10, 14	LO #1, 2, 8 and 7
	Assignments	3	15% (15)	2, 9, 13	LO # 3, 4, 6 and 7
	Projects / Lab.				
	Report	1	10% (10)	14	LO # 1-7
Summative assessment	**Midterm Exam**	2 hours	10% (10)	7	LO # 1-4
	Final Exam	3 hours	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	• Famous couples.
Week 2	• Do's and Don'ts.
Week 3	• Going places.
Week 4	• Scared to death.
Week 5	• Things that changed the world.
Week 6	• Dreams and reality.
Week 7	• Earning a living.
Week 8	• Love you and leave you.
Week 9	• it's a wonderful world!
Week 10	• Get happy.
Week 11	• Telling tales.
Week 12	• Doing the right thing.
Week 13	• on the move.
Week 14	• l just love.
Week 15	• The world of work.
Week 16	• Preparatory week before the final Exam.

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	• Soars, J., Soars, L. (2006). New Headway Plus: Pre-intermediate. United Kingdom: Oxford University Press. • L. Soars and J. Soars, New Headway Plus - Intermediate, 4th ed. Oxford: Oxford University Press, 2019.	Yes
Recommended Texts	• Audio CDs or Online Audio: Recordings of listening exercises, dialogues, and pronunciation practice.	No
Websites	Collage E- Library	

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
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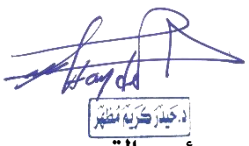
أستاذ المادة

م.م. قمر ضياء مرجان



رئيس القسم

م.د. حيدر كريم مظهر

العميد

أ . د . هارون عبد الكاظم شهد

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information	معلومات المادة الدراسية		
Module Title	Arabic Language (2)	Module Delivery	
Module Type	Basic	☒ Theory ☒ Lecture ☐ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	MTU1009		
ECTS Credits	2		
SWL (hr/sem)	50		
Module Level	2	Semester of Delivery	2
Administering Department	ENG - STE	College	EETC
Module Leader		e-mail	
Module Leader's Acad. Title		Module Leader's Qualification	
Module Tutor		e-mail	
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date		Version Number	1.0

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

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

Module Aims أهداف المادة الدراسية	أهداف المادة الدراسية هى الى يكون الطالب قادرا على أن : ١- يتعرف على ماهية التعبير القرآني. ٢- يتعلم القواعد النحوية المستعملة فى التعبير القرآني، والأثر البلاني والفني الذي يترتب على كيفية التعبير القرآني، وأن يفهم الطالب كيفية التحليل للنصوص القرآنية. ٣- يتعرف على شخصية من أهم شخصيات الأدب والشعر العري والعراقي، بدر شاكر السياب ، ومعرفة شعره. ٤- يتعرف على علامات الإعراب الأصلية والفرعية ،ويتعلم استعملها فى اللغة العربية ، ويفهم الفرق بين علامات الإعراب الفرعية والاصلية. ٥- يتعلم الفرق بين الجمل الأسمية والفعلية ، ويتعرف على أنواع المبتدأ، وأنواع الخبر، ويفهم الفرق بينهما . ٦- يتعرف عل إن واخواتها ، ويتعلم القواعد الخاصة بها. ٧- يفهم الفرق بين إن و أن، وأنو أن ، ويطبق ذلك عند استعمال كل منها فى النصوص. ٨- يتعرف عل كان وأخواتها ، ويتعلم عمل كل منها فى اللغة ، ويتمكن من استعمالها الصحيح فى اللغة . ٩- يتعرف على عمل الأفعال الخمسة ،وعلامات إعرابها ،ويستطيع استعمالها بشكل صحيح فى الخطاب ، أو النص. ١٠- يتعرف على الأخطاء اللغوية ، ويتعلم تجنبها أثناء الكتابة. ١١- يدرس معلومات لغوية : الأضداد والمرادفات ،والفرق اللغوية ، والمعاملات النحوية ، ويفهم الفرق بينها ، ويتمكن من تحليلها . ١٢- يتعلم إعراب المثنى . ١٣- يتعرف على أنواع الجموع، ويتعلم التفريق بينها ، ويفهم كيفية إعرابها. ١٤- يتعلم كيفية كتابة قواعد اللغة العربية فى لوحة بيانية ، ويتمكن من تصويب الأخطاء اللغوية .

Module Learning Outcomes مخرجات التعلم للمادة الدراسية	**مخرجات التعلم للمادة الدراسية هي:** **١. قدرة الطالب على فهم التعبير القرآني ، وتحليل النصوص.** **٢. القدرة على استخدام القواعد النحوية ،وفهم الأساليب البلاغية والقدرة على استعمالها.** **٣. معرفة الطالب لشخصية الشاعر والأديب بدر شاكر السياب ، وأهم أشعاره وآثاره.** **٤. القدرة على التمييز بين علامات الإعراب الأصلية والفرعية ، والقدرة على استعمالها في الخطاب.** **، أو النص.** **٥. قدرة الطالب على التمييز بين الجمل الأسمية والفعلية ، وقدرته على التمييز بين أنواع المبتدأ،** **والخبر ، وكيفية استعمال الجمل وإعرابها.** **٦. فهم الطالب لعمل إن وأخواتها ، وقدرته على استعمالها بشكل صحيح في الجمل.** **٧. القدرة على التفريق بين أن وإن، وإن وأن، واستعمالها في مواضعها الصحيحة في النصوص.** **٨. القدرة على فهم عمل كان وأخواتها ، واستعمالها بشكل صحيح.** **٩. التمكن من معرفة و أعراب الأفعال الخمسة ، وكيفية استعمالها في الجمل.** **١٠. القدرة على معرفة وتجنب الأخطاء اللغوية عند الكتابة.** **١١. معرفة إعراب المثنى.** **١٢. القدرة على التمييز بين الجموع ، وكيفية إعرابها ، واستعمالها في الجمل.** **١٣. معرفة الطالب لمعلومات لغوية : المرادفات. والأضداد ، والفرق اللغوية ، والمعادلات** **، أو استعمالها في الجمل.**
Indicative Contents المحتويات الإرشادية	**المحتويات الإرشادية في مادة اللغة تشمل مجموعة من المفاهيم والمواضيع التي يتم تغطيتها خلال عملية التعلم. ومن بين المحتويات الإرشادية المهمة:**
	١. مقدمة عن التعبير القرآني، وتعريف بالإعجاز اللغوي في آيات القرآن الكريم وجمالية اللغة العربية وبلاغتها. (٤ ساعات) ٢. التعريف بشخصية الشاعر الكبير بدر شاكر السياب ، وأهمية شعره في الأدب العري والعراقي. (٤ ساعات) ٣. دراسة علامات الإعراب ، بنوعيها ، وكيفية الأعراب ، (٤ ساعات) ٤. دراسة الجمل الأسمية والفعلية ، وتعلم التفريق بين الأنواع المبتدأ ، وأنواع الخبر. (٤ ساعات) ٥. دراسة إن وأخواتها ، وكيفية عملها وأعرابها . (٤ ساعات) ٦. دراسة الفرق بين إن وأن، وإن وأن، وكيفية عملها وأعرابها. (٤ ساعات) ٧. دراسة كان وأخواتها ، وكيفية عملها وإعرابها. (٤ ساعات) ٨. التعريف بالأفعال الخمسة ، وعملها وإعرابها.. (٤ ساعات) ٩. دراسة الأخطاء اللغوية الشائعة وتطبيقاتها في النصوص. (٤ ساعات) ١٠. تعلم المعلومات اللغوية : الأضداد والمترادفات، والفروق اللغوية ، والمعادلات النحوية، (٣ ساعات) ١١. دراسة المثنى وأعرابه .(٣ساعات) ١٢. دراسة الجموع ، وأنواعها وإعرابها. (٣ ساعات) ١٣. دراسة القواعد النحوية وكتابتها فى رسم بيانى ، وتصويب الأخطاء اللغوية، (٣ ساعات)

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	استراتيجيات التعلم والتعليم المستخدمة في مادة اللغة تشمل مجموعة متنوعة من النهج والتقنيات التي تعزز عملية التعلم للطلاب. من بين هذه الاستراتيجيات: ١. التفاعل النشط: يتم تشجيع الطلاب على المشاركة والمشاركة الفعالة في الدروس من خلال المناقشات الجماعية والأنشطة التفاعلية. ٢. التعلم التعاوني: يشجع التعاون والتعاون بين الطلاب من خلال العمل الجماي والمشاريع الجماعية، حيث يتعاون الطلاب مع بعضهم البعض لتحقيق أهداف التعلم المحددة. ٣. التطبيق العملي: يتم توفير فرص للطلاب لتطبيق المفاهيم والمهارات المكتسبة في سياقات عملية وواقعية، مما يعزز التفاعل الفعال مع المادة. ٤. استخدام التقنيات الحديثة: يستفيد الطلاب من استخدام التكنولوجيا في عملية التعلم، مثل استخدام الحواسيب والإنترنت للبحث والتعلم الذاتي. ٥. توفير ردود فعل فورية: يتم توفير ردود فعل فورية وتقييم مستمر للطلاب، سواء عن طريق التقييمات الشفهية أو الكتابية، مما يساعدهم على تحسين أدائهم وتطوير مهاراتهم. ٦. التنويع في وسائل التواصل: يتم استخدام مجموعة متنوعة من وسائل التواصل والتعليم، مثل المحاضرات التوضيحية، والمناقشات الجماعية، والأنشطة العملية، والعروض التقديمية، لتلبية احتياجات وأساليب التعلم المختلفة للطلاب. باستخدام هذه الاستراتيجيات، يتم تعزيز التفاعل والتعلم الفعال للطلاب، و تحفيز على المشاركة واكتساب المعرفة والمهارات بشكل شامل وشيق.

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

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	17	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	1
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**50**		

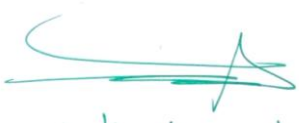
Module Evaluation
تقييم المادة الدراسية

		Time/ Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative Assessment	**Quizzes**	3	15% (15)	5, 10, 13	LO #1, 5, and 11
	Assignments	3	15% (15)	2, 11, 14	LO # 3, 6 and 12
	Projects / Lab.				
	Report	1	10% (10)	14	LO # 1-13
Summative Assessment	**Midterm Exam**	2 hours	10% (10)	7	LO # 1-7
	Final Exam	3 hours	50% (50)	16	All
Total assessment			100% (100 Marks)		

المنهاج الاسبوعي النظري **Delivery Plan (Weekly Syllabus)**	
الأسبوع الأول ، والثاني	التعبير القرآني، نحويًا من حيث تركيب الجملة والنص. بلاغيًا من حيث التأثير الفني، والرجوع إلى المصدر (كتاب التعبير القرآني) للدكتور فاضل السامرائي.
الاسبوع الثالث	الشاعر بدر شاكر السياب.
الأسبوع الرابع	علامات الإعراب الأصلية:(الفتحة والضمة، والكسرة)، وعلامات الإعراب الفرعية :(الألف ، والواو، والياء).
الأسبوع الخامس	الجمل الأسمية – المبتدأ والخبر، وانواع المبتدأ ، وأنواع الخبر.
الأسبوع السادس	أنَّ وأخواتها
الأسبوع السابع	الفرق بين إنَّ وأنَّ، وأنْ وإنْ.
الأسبوع الثامن	كان وأخواتها.
الأسبوع التاسع و العاشر	الأفعال الخمسة.
الاسبوع الحادي عشر	الأخطاء اللغوية الجزء (2)
الاسبوع الثاني عشر	معلومات لغوية: المرادفات والاضداد، وفروق لغوية. ومعادلات نحوية.
الأسبوع الثالث عشر و الرابع عشر	المثنى وإعرابه.
الأسبوع الخامس عشر	أنواع الجموع : جمع المذكر السالم- جمع المؤنث السالم- جمع التكسير .
الأسبوع السادس عشر	هندسة النحو: قواعد اللغة العربية، وتصويبات لغوية

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	• ملزمة اللغة العربية (المعممة من وزارة التعليم العالي والبحث	Yes
Recommended Texts		No
Websites	The Collage E-Library	

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX –** Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.				



العميد

أ . د . هارون عبد الكاظم شهد

رئيس القسم

م.د. حيدر كريم مظهر

أستاذ المادة

م.م.