2- Undergraduate Courses 2023-2024

LEVEL: UGI

First Course

1

Code	Course/Module Title	ECTS	Semester
PRFU111	Programming fundamental	8	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
4	0/2/0/1	110	90
Description			
To develop problem solving skills, this course deals with the basic concept of Algorithms and to understand the meaning of programming. So, Understanding the meaning of algorithms and how to write it, Understand the various types of data, Learn how to draw flowchart, Understanding the main data types in C++ (logical and mathematics operations), Capable of writing While an For statements in the program and Have the ability to use conditions (IF , IF else) statements.			

Module Information معلومات المادة الدراسية			
Module Title	**Programming fundamental**	**Module Delivery**	
Module Type	CORE	**-Theory Lecture** **-Lab** **-PracticalSeminar**	
Module Code	PRFU111		
ECTS Credits	8		
SWL (hr/sem)	200		
Module Level	1	**Semester of Delivery**	1
Administering Department		**College**	
Module Leader	Assist Lecture Sara Haitham	**e-mail**	110024@uotechnology.edu.iq
Module Leader's Acad. Title	Assist Lecture	**Module Leader's Qualification**	M.Sc.
Module Tutor	None	**e-mail**	None

Peer Reviewer Name		**e-mail**	
Review Committee Approval		**Version Number**	

Relation With Other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	
Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية			
Module Aims أهداف المادة الدراسية	1. To develop problem solving skills 2. This course deals with the basic concept of Algorithms. 3. To understand the meaning of programming.		
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Understanding the meaning of algorithms and how to write it 2. Understand the various types of data 3. Learn how to draw flowchart. 4. Understanding the main data types in C++ , and logical and mathematics operations 5. Capable of writing While an For statements in the program. 6. Have the ability to use conditions (IF , IF else) statements		
Indicative Contents المحتويات الإرشادية	1. Explain the steps involved in problem definition and analysis. 2.Learn how to write algorithm and draw the flowchart to solve a particular problem 3. Define program that capable of reading and printing data. 4. Learn how to repeat execution of a block of statements (While, For) 5. Learn how to use conditions in the program		
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	102	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	7
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	98	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	7
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	200		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	1	10% (10)	5	LO # 1 and 3
	Practical Seminar(Lab).	2	15% (15)	Continuous	LO # 2 , 4 and 5
Summative assessment	**Midterm Exam**	1 hr	15% (15)	14	LO # 1 to 5
	Final Exam	3hr	60% (60)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	• Introduction, Procedural Programming Principles • Introduction to algorithm • Algorithms example
Week 2	• Flowchart definition and its symbols • Flowchart examples
Week 3	• C++ programming language • Structure of C++ program • Reserved words and Header files • Character set and Identifiers • Variable and Constant • Data type (int , float , char , void) • Cout , Cin

Week 4	• Constant • % operator • IF statement • Compound IF statement • IF / ELSE statement
Week 5	**Quizzes**
Week 6	• && , || with if statement • ELSE IF statement
Week 7	• Switch statement • Nested switch statement
Week 8	• C++ operators : Arithmetic , Assignment ,Comparison ,Logical • Operators precedence
Week 9	• Unary operators (++ , --) • Prefix ,Postfix notation
Week 10	• Examples of order evaluation • "math.h" library : Exp,Log,Sin, Cos,Tan,Pow,Sqrt
Week 11	• While statement
Week 12	• Do / While statement
Week 13	• For loop statement
Week 14	**Midterm Exam**
Week 15	**Preparatory Week**
Week 16	**Final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Introduction to C++ environment
Week 2	Introduction to C++ environment
Week 3	• C++ programming language • Structure of C++ program • Reserved words and Header files • Character set • Variable and Constant • Data type (int , float , char , void) • Cout , Cin
Week 4	• IF statement • Compound IF statement • IF / ELSE statement

	• Constant • % operator
Week 5	**Quizzes**
Week 6	• && , || with if statement • ELSE IF statement
Week 7	• Switch statement • Nested switch statement
Week 8	• C++ operators : Arithmetic , Assignment ,Comparison ,Logical • Operators precedence
Week 9	• Unary operators (++ , --) • Prefix ,Postfix notation
Week 10	• Examples of order evaluation • "math.h" library : Exp,Log,Sin, Cos,Tan,Pow,Sqrt
Week 11	While statement
Week 12	Do / While statement
Week 13	For loop statement

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Mastring C++, Amman-Jordan, AL-Shorok, 2002	Yes
Recommended Texts	1- OqeiliSalch, prof. Department of IT-AL-Balqa Applied University. .	No
Websites		

APPENDIX:

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

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

Note:

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

2

Code	Course/Module Title	ECTS	Semester
MATH112	Mathematics	6	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
4	0/0/0/2	93	57
Description			
To understand the Mathematical background and learn the matrix, Types of matrix, Matrix addition, subtraction, and multiplication, Determinant, transpose, and Grammar rule for solving system of equation. Then study the Functions, Domain and range of functions and Graphing of function. So, understand the Limits, Derivation, Series, Integration, and Application of integral area under the curve and Area between two curves.			

Module Information

معلومات المادة الدراسية

Module Title	MATHEMATICS	**Module Delivery**	
Module Type	BASIC	**Theory** **Lecture** **Lab** **Tutorial** **Practical** **Seminar**	
Module Code	MATH112		
ECTS Credits	6		
SWL (hr/sem)	200		

Module Level	1	**Semester of Delivery**	1
Administering Department	Type Dept. Code	**College**	Type College Code
Module Leader	Prof. Naji Matar suhaib	**e-mail**	Naji_e2006@yahoo.com
Module Leader's Acad. Title	Prof.	**Module Leader's Qualification**	M.Sc
Module Tutor	None	**e-mail**	None
Peer Reviewer Name		**e-mail**	
Review Committee Approval		**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	4. To learn how solve and develop problem solving skills
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Learning how solve equations by hand without computer. 2. Develop the brain ability.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. ➢ Mathematical background ➢ Matrix

- Types of matrix
- Matrix addition, subtraction, and multiplication
- Determinant, transpose, and rank of matrix
- Inverse of matrix, absolute value, and polynomials

➢ Functions
- Function Definition
- Domain and range of functions

➢ Derivation
- Mathematical definition of derivation, rule of derivation
- Derivation of trigonometric, inverse trigonometric, logarithm, exponential .

➢ Series

➢ integration
- Integration Indefinite integral
- Rules of integral
- Method of integration

-Partial derivative

Partial derivative of two variables, total differential.

-Differential equations

First order differential equations

Variable separable, homogeneous differential equation, Exact differential equation, first order linear differential equation.

➢ Second order differential equation

Homogeneous second order with constant coefficient, non Homogeneous second order with constant coefficient, Variation of parameter.

-Laplace transformation

Definition, Laplace transformation of some function, Laplace transformation of differential

Properties of L.T

(1) Shifting

(2) L.T of integrals

Multiplication by t^n.

-Inverse laplace transformation

Properties of inverse L.T

1- Partial fraction,2- Application of Laplace transformation Linear(D.E) with constant coefficient.

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 mathematical 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	110	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	7.3
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	90	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	200		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	1	5% (5)	5, 10	LO #1, 2
	Assignments	1	3% (3)	2, 12	LO # 1, 2
	Projects / Lab.	1	15%(15)	15	LO # 1, 2
	Report	1	2%(2)	13	LO # 1, 2
Summative assessment	**Midterm Exam**	2 hr	15% (15)	7	LO # 1, 2
	Final Exam	3hr	60% (60)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	➢ Mathematical background

	➢ Matrix Types of matrix, Matrix addition, subtraction, and multiplication, Determinant, transpose, and rank of matrix
Week 2	Inverse of matrix, absolute value,
Week 3	➢ Functions , Function Definition, Domain and range of functions and polynomials,
Week 4	➢ Derivation Mathematical definition of derivation, rule of derivation Derivation of trigonometric, inverse trigonometric, logarithm, exponential.
Week 5	➢ Series
Week 6	➢ Integration Indefinite integral, Rules of integral.
Week 7	Method of integration
Week 8	Partial derivative Partial derivative of two variables, total differential.
Week 9	Differential equations First order differential equations Variable separable, homogeneous differential equation
Week 10	Exact differential equation, first order linear differential equation.
Week 11	➢ Second order differential equation ➢ Homogeneous second order with constant coefficient, non Homogeneous second order with constant coefficient.
Week 12	Variation of parameter
Week 13	Laplace transformation Definition, Laplace transformation of some function, Laplace transformation of differential Properties of L.T (3) Shifting (4) L.T of integrals (5) Multiplication by t^n.
Week 14	Inverse laplace transformation Properties of inverse L.T 2- Partial fraction
Week 15	3- Application of Laplace transformation 4- Linear(D.E) with constant coefficient.

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered

Week 1	➢ How to use Matlab ➢ matrix Types of matrix, Matrix addition, subtraction, and multiplication, Determinant, transpose, and rank of matrix
Week 2	Inverse of matrix, absolute value,
Week 3	Functions , Function Definition, polynomials,
Week 4	Derivation Mathematical definition of derivation, rule of derivation Derivation of trigonometric, inverse trigonometric, logarithm, exponential.
Week 5	Series
Week 6	Integration Indefinite integral, Rules of integral.
Week 7	Method of integration
Week 8	Partial derivative Partial derivative of two variables, total differential.
Week 9	Differential equations First order differential equations Variable separable,
Week 10	homogeneous differential equation
Week 11	Exact differential equation, first order linear differential equation.
Week 12	Second order differential equation
Week 13	Homogeneous second order with constant coefficient,
Week 14	non Homogeneous second order with constant coefficient.
Week 15	Laplace transformation

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	**Thomas,G. Calculus and Analytic Geometry,Fifth Edition,Addition Wesly,1999**	Yes
Recommended Texts		
Websites	https://youtube.com/@soraali5120	

APPENDIX:

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

3

Code	Course/Module Title	ECTS	Semester
STPR113	Statistics and probability	6	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
4	0/0/0/2	93	57
Description			
To develop problem solving skills, this course deals with the basic concept of population, samples, type of samples, Random variables, discrete and continuous variable. Then study the Data Organization, frequency distribution, histogram, and measurement of central tendency. So understand the measurements of variation (standard deviation, variance, coefficient of variation). Learn about the Probability Theory, probability theorems,Counting techniques, and Conditional probabilityevelop skill with Continuous Probability Distributions and Correlation and Regression			

Module Information
معلومات المادة الدراسية

Module Title	STATISTICS AND PROBABILITY	**Module Delivery**	
Module Type	CORE	**Theory** **Lecture** **Tutorial** **Practical**	
Module Code	STPR113		
ECTS Credits	6		
SWL (hr/sem)	150		
Module Level	1	**Semester of Delivery**	1
Administering Department	Type Dept. Code	**College**	Type College Code
Module Leader	Dr. Ammar Moayed	**e-mail**	
Module Leader's Acad. Title	Lecturer	**Module Leader's Qualification**	Ph.D.
Module Tutor	None	**e-mail**	Ammar.m@coadec.uobaghdad.edu.iq
Peer Reviewer Name		**e-mail**	
Review Committee Approval	01/06/2023	**Version Number**	1.0

Relation With Other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	
Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية			
Module Aims أهداف المادة الدراسية	5. Understand the laws of statistics and data distribution. 6. Enable the student to transform large data into understandable shapes and illustrations, and to deduce statistical data. 7. provide the students with details statistics and data population. 8. Define and explain the basic of probabilistic metrics like event, outcome, trial, simple event, sample space, Venn Diagram ,tree diagram, and calculate the probability that an event will occur. 5. Define and explain the basic of statistical measurements like Data Organization, variation, of central tendency. 6.Express the concepts and principal of counting techniques (factorial , combination) and the basic principles of Probability Theory 7. Solve the problems about permutation, combination and Binomial Theorem.		
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1.provide the students with details Probability and its theories and how apply them on game theory. 2.Enable the student to transform large data into understandable shapes and illustrations, and to deduce statistical data 3. Express the concept of probability and its features. Explain the concept of a random event, addition and multiplication probabilities lows . 4.Understand the laws of statistics and data distribution 5. Express the concepts of factorial and the basic principal of counting. Solve the problems about permutation, combination and Binomial Theorem. 6. enable the students with knowledge of the problems and solutions that may face in future and depend on probability theory to solve them		
Indicative Contents المحتويات الإرشادية	Part A - statistic 1-Population, samples, type of samples, Random variables discrete variable, continuous variable, Data Organization. [4] 2- frequency distribution, histogram [8]		

	3- Measurement of central tendency - mean, median, mode. [6]. 4- measurements of variation -standard deviation, variance.[6] 5- Coefficient of variation, Correlation and Regression. [8] Part b – probability. 1- Probability Theory -sample space, events, rules of probability. [4] 2- Venn Diagram, tree diagram, probability theorems -Addition theorem.[4] 3- Multiplication theorem.[4] 4- Combinations ,Conditional probability[4] 5- Bayes theorem, Independent of events, Discrete Probability distributions.[4] 6- Binomial distribution, Multinomial distribution.[4] 7- Poisson distribution, Continuous Probability Distributions-Uniform distribution.[4] 8- Normal distribution, Exponential distribution[4].
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 examples 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	86	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	64	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4.5
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**
	Quizzes	2	6% (10)	5, 10	LO #2,4, and 5

Formative assessment	**Assignments**	2	4% (10)	2, 12	LO # 2 and 5
Summative assessment	**Midterm Exam**	1 hr	20% (10)	7	LO # 1-5
	Final Exam	2hr	70% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Population ,samples , type of samples, Random variables discrete variable, continuous variable, Data Organization.
Week 2	frequency distribution, histogram
Week 3	measurement of central tendency - mean ,median, mode.
Week 4	measurements of variation -standard deviation, variance ,coefficient of variation
Week 5	Probability Theory -sample space, events ,rules of probability, Venn Diagram.
Week 6	tree diagram, probability theorems -Addition theorem.
Week 7	Mid-term Exam
Week 8	Multiplication theorem.
Week 9	Counting techniques :Factorial, Permutations, Combinations ,Conditional probability
Week 10	Bayes theorem, Independent of events, Discrete Probability distributions.
Week 11	Binomial distribution, Multinomial distribution.
Week 12	Poisson distribution, Continuous Probability Distributions-Uniform distribution.
Week 13	Normal distribution, Exponential distribution.
Week 14	Correlation and Regression.
Week 15	**Preparatory Week**
Week 16	**Final Exam**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	1. Probability and statistics, theory and applications, Gunnar Blom 2. Probability and statistics for engineers, Richard L. Scheaffer 3. Statistics: theories and applications, Joseph Inungo, 2006. 4. Introductory Statistics , Ronald J. Wonnacott	Yes
Recommended Texts	Introduction to Statistics and Data Analysis	No
Websites	https://www.spps.org/cms/lib/MN01910242/Centricity/Domain/859/Statistics%20Textbook.pdf	

APPENDIX:

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

Note:

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

4

Code	Course/Module Title	ECTS	Semester
FUCT115	Fundamental of Computer Technology	4	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	0/0/0/2	63	37
Description			
To study the Software types, Software characteristics. To learn what are terms associated with Computer Technology, and Understanding Applications, the Cloud, and Software Development programs. Database fundamentals, Operating system basics. To learn the Software Development process and Software analysis. To Understanding the Software Design and Safety and Maintenance.			

Module Information
معلومات المادة الدراسية

Module Title	Fundamental of Computer Technology	**Module Delivery**	
Module Type	CORE	**Theory** **Lecture** **Tutorial**	
Module Code	FUCT115		
ECTS Credits	4		
SWL (hr/sem)	100		
Module Level	1	**Semester of Delivery**	1
Administering Department	Type Dept. Code	**College**	Type College Code
Module Leader	Assist Lecture Mustafa Muhanad M.Salih	**e-mail**	mustafamuhanad@muc.edu.iq
Module Leader's Acad. Title	Assist Lecture	**Module Leader's Qualification**	Ms.c
Module Tutor	None	**e-mail**	None
Peer Reviewer Name		**e-mail**	
Review Committee Approval		**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	9. This course deals with the basic concept of Computer Technology. 10. This is the basic subject for all Computer Technology subject.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	3. Recognize Computer Technology. 4. List the various terms associated with Computer Technology. 5. Summarize what is meant by Computer Technology.
Indicative Contents المحتويات الإرشادية	1. Explain the main concept involved in Computer Technology. 2.Learn what are terms associated with Computer Technology.

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	58	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	42	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3
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	10% (10)	5, 10	LO #1, 2, and 3
	Assignments	2	10% (10)	2, 12	LO #1, 2, and 3
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	10% (10)	13	LO #1, 2, and 3
Summative assessment	Midterm Exam	2 hr	10% (10)	7	LO #1, 2, and 3
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	Software - Software types - Software characteristics
Week 2	Programming language basics - Low level (assembly) language - High level language
Week 3	Understanding Applications - Desktop applications - Mobile applications
Week 4	Understanding the Cloud - What is the cloud - Why use the cloud - What is a web application
Week 5	Software Development programs - Editor - Translator - Linking loader - Debugger
Week 6	Database fundamentals
Week 7	Mid-term Exam + Unit-Step Forcing, Forced Response, the RLC Circuit
Week 8	Operating system basics
Week 9	Software Development process
Week 10	Software analysis - Flowchart
Week 11	Software Design

	- Data flow diagram (DFD) - Walkthrough
Week 12	Software Design - Data flow diagram (DFD) - Walkthrough
Week 13	Safety and Maintenance - Keeping Your Computer Clean - Protecting Your Computer - Creating a Safe Workspace
Week 14	Safety and Maintenance - Keeping Your Computer Clean - Protecting Your Computer - Creating a Safe Workspace
Week 15	**Preparatory Week**
Week 16	**Final Exam**

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	- Foundations of Computer Technology, By Alexander John Anderson.	No

APPENDIX:

GRADING SCHEME
مخطط الدرجات

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

Note:

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

5

Code	Course/Module Title	ECTS	Semester
DEHR105	Democracy and Human Rights	2	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	0/0/0/0	33	17

Description

يتضمن مفهوم مادة الحقوق والديمقراطية (تعريف الحقوق-خصائص الحقوق).ويعرف الطالب بمفهوم حقوق الانسان في الشرائع السماوية(الديانتين المسيحية واليهودية- الدين الاسلامي). كما يتضمن شرح مصادر حقوق الانسان(المصادر الدولية- المصادر الوطنية)وضمانات حقوق الانسان(الضمانات على الصعيد الداخلي- الضمانات على الصعيدالدولي).كذلك التقدم التكنولوجي واثره على الحقوق والحريات(الاحزاب السياسية- حماية الملكية الفكرية). ومفهوم الديمقراطية وصورها وآلية النظام النيابي(الانتخاب). وهناك العديد من الاستراتيجيات التعليمية المشتركة التي يمكن تطبيقها واستخدامها في تدريس وتعلم مادة حقوق الانسان والديمقراطية في الجامعات.

Module Information
معلومات المادة الدراسية

Module Title	Democracy and Human Rights		**Module Delivery**	
Module Type	BASIC		**Theory** **Lecture** **Tutorial** **Practical** **Seminar**	
Module Code	DEHR105			
ECTS Credits	2			
SWL (hr/sem)	50			
Module Level	1	**Semester of Delivery**	1	
Administering Department	Type Dept. Code	**College**	Type College Code	
Module Leader	Assist Lecture Mohammd faroq mahmoud	**e-mail**	Mohammed.faroq@muc.edu.iq	
Module Leader's Acad. Title	Assist Lecture	**Module Leader's Qualification**	Ms.c	
Module Tutor	None	**e-mail**	None	
Peer Reviewer Name		**e-mail**		
Review Committee Approval		**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 Objectives أهداف المادة الدراسية	1-تعزيز الحوار والاحترام المتبادل: تسعى المادة إلى تعزيز الحوار المفتوح والبناء بين الطلاب وتشجيعهم على احترام وتقدير وجهات نظر الآخرين، حتى في حالة اختلاف الرأي. وتهدف أيضًا إلى تعزيز التفاهم المتبادل وقدرة الطلاب على التفاعل مع الآراء المتنوعة. 2-تطوير المهارات الحياتية: تساهم مادة حقوق الانسان, والديمقراطية في تطوير مهارات حيوية للطلاب، مثل التفكير النقدي، والقراءة والكتابة، والبحث، وحل المشكلات، واتخاذ القرارات المستنيرة، والتواصل الفعّال. 3-تعزيز المواطنة النشطة: تهدف المادة إلى تعزيز المواطنة النشطة لدى الطلاب، وتشجيعهم على المشاركة في العمل الجماعي.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	من المتوقع أن تحقق مادة حقوق الانسان والديمقراطية في الجامعات مجموعة من المخرجات التعلمية للطلاب. وفيما يلي بعض المخرجات المحتملة لهذه المادة: 1. الفهم العميق لمفاهيم حقوق الانسان والديمقراطية: يمكن للطلاب أن يكتسبوا فهمًا شاملاً لمفاهيم حقوق الانسان والديمقراطية ومبادئها الأساسية، بما في ذلك حقوق الإنسان، وحرية التعبير، والمساواة، وحوكمة القانون. 2. تعزيز الحوار والاحترام المتبادل: يمكن للطلاب أن يتعلموا كيفية المشاركة في حوارات بنّاءة ومتعاونة، وتقدير واحترام وجهات نظر الآخرين، حتى في حالة اختلاف الرأي. 3. تعزيز الوعي بالمواطنة: يمكن للطلاب أن يكتسبوا وعيًا أكبر بمسؤولياتهم كمواطنين ودورهم في المجتمع، وتعزيز المواطنة النشطة والمشاركة الاجتماعية.
Indicative Contents المحتويات الإرشادية	نتناول مادة حقوق الانسان والديمقراطية من ناحية مفهوم حقوق الانسان وموقف الشرائع السماوية من الحقوق ومصادر الحقوق وضماناتها ومفهوم الديمقراطية وصورها وآلية النظام النيابي(الانتخاب)

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	هناك العديد من الاستراتيجيات التي يمكن استخدامها في تدريس وتعلم مادة حقوق الانسان والديمقراطية في الجامعات. وفيما يلي بعض الاستراتيجيات التعليمية المشتركة التي يمكن تطبيقها:

	1. المناقشات الجماعية: يمكن تنظيم مناقشات جماعية حول مواضيع حقوق الانسان والديمقراطية. يتم توجيه الطلاب لتبادل وجهات النظر والمناقشة النقدية بشأن قضايا مثل حقوق الإنسان. ينبغي تشجيع المشاركة الفعّالة واحترام وجهات النظر المختلفة. 2. دراسات الحالة: يمكن استخدام دراسات الحالة لتعريف الطلاب بتجارب حقيقية لحقوق الانسان والديمقراطية أو حالات انتهاكات لحقوق الإنسان. 3. العروض التقديمية والمنشورات: يمكن للطلاب إعداد عروض تقديمية ومنشورات حول مفاهيم حقوق الانسان والديمقراطية وتطبيقاتها. يمكنهم استخدام الصور والرسوم التوضيحية والأمثلة الواقعية لتوضيح المفاهيم بشكل أكثر وضوحًا .

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	2.2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	17	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	1.13
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**50**		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	5 and 10	LO #1, #2 and #3
	Assignments	2	10% (10)	2 and 12	LO #1, #2 and #3
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	LO #1, #2 and #3
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	مفهوم الديمقراطية- اشكال الديمقراطية1_ الديمقراطية المباشرة
Week 2	2-الديمقراطية شبه المباشرة
Week 3	3-الديمقراطية التمثيلية (النيابية).(المفهوم والاركان)
Week 4	اشكال النظام التمثيلي (النيابي)(النظام المجلسي-النظام الرئاسي)
Week 5	اشكال النظام التمثيلي- النظام البرلماني
Week 6	آلية النظام التمثيلي (النيابي): الانتخاب (مفهوم الانتخاب- هيئة الناخبين)
Week 7	نظم الانتخابات
Week 8	مفهوم الحقوق (التعريف -الفئات)
Week 9	حقوق الإنسان في الشرائع السماوية(الديانات المسيحية واليهودية)
Week 10	حقوق الانسان في الشرائع السماوية(الدين الإسلامي)
Week 11	المصادر الدولية لحقوق الانسان أ- الإعلان العالمي لحقوق الانسان
Week 12	ب- العهدان الدوليان الخاصان بحقوق الإنسان
Week 13	ضمانات حقوق الإنسان على الصعيد الداخلي
Week 14	ضمانات حقوق الإنسان على الصعيد الدولي
Week 15	الامتحان النهائي

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	حقوق الانسان والطفل والديمقراطية تأليف: د.ماهر صالح علاوي الجبوري، د.رعد ناجي الجدة، د.رياض عزيز هاي، د.كامل عبد العنكود، د.علي عبدالرزاق محمد، د.حسان محمد شفيق	No
Recommended Texts		
Websites		

APPENDIX:

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

6

Second Course

1

Code	Course/Module Title	ECTS	Semester
STPR121	Structured Programming	8	2
Lectures (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USSWL (hr/w)**
4	0/2/0/1	110	90
Description			
This course is to understand the Defining a function, Return statement, Types of functions, Actual and formal arguments, Recursive functions. Then study the Arrays (One dimensional array (declaration, initialization, Accessing), Two dimensional array (declaration, initialization, Accessing)). So develop skill of String manipulation (Structures ,Pointers)			

2

Code	Course/Module Title	ECTS	Semester
DIST122	Discrete Structures	5	2
Lectures (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USSWL (hr/w)**
3	0/0/0/1	63	62
Description			

This course deal with Set theory, Mathematical induction, Relations(Computer representation of relations and Digraph, Manipulation of relations, Properties of relations, and Composition of relations), Functions, Graphs(Matrices and graph, Trees, rooted tree, ordered rooted tree, polish notation, with examples), and Finite state machines

3

Code	Course/Module Title	ECTS	Semester
LODE123	Logic Design	6	2
Lectures (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USSWL (hr/w)**
3	0/2/0/1	95	55

Description
This course is to develop the skill of Number system (Decimal,Binary,Octal, Hexadecimal), then understand the Addition and subtraction, Logic gats, Boolean algebra and simplification and demerger's and K-map. So to learn about Combinational universal NAND and NOR logic, Half-adder, full-adder, 4-bit parallel adder, and Subtract adder and Decoder, encoder, multiplexer, and demultiplexer. So to understand the Sequential logic circuits and Flip-flop, SR, D, and JK flip-flop,Shift register 3-bit and 4-bit, Binary counter 3-bit and 4- bit.

4

Code	Course/Module Title	ECTS	Semester
SODT124	Software Development Techniques	4	2
Lectures (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USSWL (hr/w)**
2	0/0/0/2	63	37
Description			
What is programming Techniques, Classification of programming Techniques, Programming Languages types, Programming Languages Translators, Features of High level Programming language, The Structure And Operation Of a Computer and The Hardware Of The Computer, Constant and variables, Representations, Representation of integer and real, and Representation of characters, Basic Arithmetic operators, Basic Logical operators, and syntax for expression, prefix, postfix and infix? what is Software , Understanding General Software Development, Software Development Life Cycle and Modularization, The Context of Software Development, Profilers, Program Planning and Design, Understanding the Program, Using Design Tools to Create a Model, Develop Test Data, Pseudo-code, top down design, Understanding Object Oriented Programming, Understanding Web Applications, Understanding Desktop Applications, Understanding Databases.			

5

Code	Course/Module Title	ECTS	Semester
SOEN125	Software Engineering	5	2
Lectures (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USSWL (hr/w)**
2	0/2/0/1	80	45
Description			
This subject introduce software engineering, what is evolving role of software, what is the Software characteristics and Software engineering principles**.** To learn the attribute of good software and Software lifecycle. To study the types of model: The waterfall model, The prototype model , The RAD model, Evolutionary software process models, The incremental model, The spiral model. Introduction to Software process and project metrics, Measures, Software Quality Metrics, Defect removal efficiency.			

6

Code	Course/Module Title	ECTS	Semester
WORK106	English/1	2	1
Lectures (hr/w)	**Lab./Prac./Tutor.**	**SSWL (hr/sem)**	**USSWL (hr/w)**
0	0/3/0	64.5	3.5
Description			
التعرف والتعلم وتطوير المهارات المتعلقة بورشة الكهرباء – ورشة السباكة – ورشة اللحام – ورشة النجارة التدريبية – ورشة الحدادة –ورشة السمكرة – ورشة البرادة – ورشة السيارات – ورشة الخراطة.			

LEVEL: UGII

First Course

1

Code	Course/Module Title	ECTS	Semester
OBOP211	Object Oriented Programming	8	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
4	0/2/0/1	110	90
Description			
This course provide the Overview for functions and parameter transmission and Introduction of OOP with its main features. So learn of Classes in OOP by Defining a Simple Class with Inline Member Functions, Constructors and destructors functions, and Friends functions, Constant Members, Static Members, Default Arguments and Implicit Member Argument. Also develop skill of Overloading(Function overloading and Operators overloading)			

2

Code	Course/Module Title	ECTS	Semester
DAST212	Data Structures	5	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	0/2/0/1	80	45
Description			
This course introduce the introduction to Data Structures with all Types and Memory representation for 1D and 2D arrays, Linear list and Linear list types, Stack Operations and some examples. Then learn the Queue and Queue Operations, Circular Queue with Operations. Also provide the skill to use Linked List, Linked-Stack, Linked-Queue, Linked-Cqueue and Recursion.			

3

Code	Course/Module Title	ECTS	Semester
NUAN213	Numerical Analysis	5	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	0/2/0/1	80	45
Description			
This course explain the concept of Numerical analysis and solving sets of equation, Elimination and iterative methods, Interpolating polynomials, Lagrange polynomial, Solving non-liner equation, Numerical differentiation and numerical integration and Numerical solution of ordinary differential equations. So introducethe topics of Curve-fitting and approximations, the solution of integral equation, trapezoidal method, Simpsons method.			

4

Code	Course/Module Title	ECTS	Semester
ADSE214	Advance Software Engineering	5	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	0/2/0/1	80	45
Description			
This course introduce Software project planning, Software Scope, Estimation models, The structure of estimation models, The COCOMO Model, The software equation model, also this course introduce risk analysis and management, project scheduling and tracking, software quality, Software reliability, Software availability. Introduction to analysis concepts and principles, Software requirements elicitation,Analysis principals. Explain the Software prototyping, Specification principles.			

5

Code	Course/Module Title	ECTS	Semester
ANDA215	Analysis and Design of Algorithms	5	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	0/2/0/1	80	45
Description			
This course explains the Concepts and properties of algorithms, Differences among best, expected, andworst case behaviours of an algorithm. Then Computing by calculating how programs are evaluated. Understand the Rule of algorithms in problem solving process and Problem solving strategies. Learn the implementation of algorithms and Algorithms strategy, algorithms efficiency			

6

Code	Course/Module Title	ECTS	Semester
ENLA216	English language	2	1
Lectures (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USSWL (hr/w)**
2	0/0/0/0	33	17
Description			
This course is develop skills of Writing and Reading. How to write and understand simple paragraphs on arrange of topics within the field of the study and interest or experience, Develop the extensive intensive reading skills by taking different passage, Write your CV in summary form. Then understand the Project Implementation by Choose a topic and apply the items of scientific writing and Make presentation by applying the rules of the four skills of the language.			

Second Course

1

Code	Course/Module Title	ECTS	Semester
DATA221	Database	8	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
4	0/2/0/1	110	90
Description			
This course includes explanation of Centralized database system, the purpose of database and Comparing between a file processing system and DBMS. So it include Data Abstraction and file system disadvantage, Entity relationship model, Relational model , Tables joining, Instant and schema And Indexing(Primary indexing, Secondary indexing, Index update, and Hash index)			

2

Code	Course/Module Title	ECTS	Semester
MICR222	Microprocessor	6	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
3	0/2/0/1	95	55
Description			
This course is developed skill about Microprocessor and Microcomputer system by explain the Microprocessor Architecture and Register Set, System Buses, Memory types and physical addressing, and I/O devices. So it includes the Instruction Set and Format, Addressing Modes, and Assembly Programming Language (Arithmetic and logical Instructions, Program Control (interrupt and subroutine call)).			

3

Code	Course/Module Title	ECTS	Semester
SOSA223	Sorting and Searching Algorithms	5	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	0/2/0/1	80	45
Description			
The topics of this course are explain the Sorting Algorithm (Insertion Sort, Selection Sort, Bubble Sort, Heap Sort, Quick Sort, and Merge Sort). Also this course is develop the skill about Searching algorithm (Sequential Search, Binary Search). Then learn Trees (Types of Tree, Binary tree, Binary tree scan, Represent Regulars expression using trees, Binary Search Tree).			

4

Code	Course/Module Title	ECTS	Semester
COCO224	Computational Complexity	4	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	0/0/0/2	63	37
Description			
The topics of this course are explain Computational complexity: Concepts and definition, Complexity classes, such as constant, logarithmic, linear, quadratic, and exponential. Empirical measurements of performance. Analysis of iterative and recursive algorithms. Also it includes Introduction to the P and NP classes, Reduction Techniques.			

5

Code	Course/Module Title	ECTS	Semester
SOMA225	Software Modelling and analysis	5	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	0/2/0/1	80	45
Description			
The topics of this course are explain modeling foundation. The type of models such as information modeling, behavioral modeling, architectural modeling, domain modeling, enterprise modeling, modeling embedded systems. also this subject includes analysis fundamental			

6

Code	Course/Module Title	ECTS	Semester
HURI226	Human Rights	2	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	0/0/0/0	33	17
Description			
يتضمن هذا الموديل مفهوم الحقوق)تعريف الحقوق-خصائص الحقوق(.ويعرف الطالب بمفهوم حقوق االنسان في الشرائع السماوية)الديانتين المسيحية واليهودية- الدين االسالمي(. كما يتضمن شرح مصادر حقوق االنسان)المصادر الدولية- المصادر الوطنية(وضمانات حقوق االنسان)الضمانات على الصعيد الداخلي- الضمانات على الصعيدالدولي(.كذلك التقدم التكنولوجي واثره على الحقوق والحريات)الاحزاب السياسية- حماية الملكية الفكرية)			

LEVEL: UGIII

First Course

1

Code	Course/Module Title	ECTS	Semester
COAR311	Computer Architecture	6	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
3	0/2/0/1	95	55
Description			
The topics of this course include some Introduction to Computer Organization (RISC and CISC, I/O Organization and Peripheral Control Strategies, I/O Interfaces and Programming, Asynchronous data transfer). So explain the Memory Management, Memory types and Hierarchy, Main Memory address map, and Associative Memory and Content Addressable Memories. Then it include the explanation about Parallel Processing and Difficulties and Solutions in Instruction Pipeline and Vector processing and Array Processing.			

2

Code	Course/Module Title	ECTS	Semester
COTH312	Computation Theory	5	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
3	0/0/0/2	78	47
Description			
This course includes the explanation of Regular Expression, Finite Automata, DFA and NFA, Equivalence of NFA and DFA, Kleen theorem, Two way finite automata with output (mealy machine, moor machine). So develop the skill about the equivalence of mealy and moor machine, and give some introduction to Crammers, Phrase Structure Grammar, Context sensitive Grammar, Context Free grammar (Chomsky Normal Form, Tree, leftmost and rightmost derivations, Regular grammar, Left linear grammar, Right linear grammar, Push down automata, Top down –bottom up derivation, and turing machine).			

3

Code	Course/Module Title	ECTS	Semester
COGR313	Computer Graphics	6	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
3	0/2/0/1	95	55
Description			
The topics of this course include the explanation of the introduction { Computer Graphics, Cathode Ray Tube (CRT) , Generating color on a RGB monitors, Coordinates system, Raster–can display, Frame Buffer, Scan conversion, Applications of computer graphics. Also it explain Vectors {unit vector, measurement associated with vectors, manipulation vectors, negative vectors and subtracting vectors, scaling Vectors, multiplying vectors uses the "dot Product" & direction Cosine, "cross product" }, Basic Shapes Drawing (Line, Circle, Ellipse), Two Dimension Transformations (Translation, Scaling, Rotation, Reflection, shearing). Clipping and Windowing and viewport and polygon			

4

Code	Course/Module Title	ECTS	Semester
PAPP314	Parallel Programming Paradigms	6	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
3	0/2/0/1	95	55
Description			
This course is understand the foundations of parallel programming, parallel hardware and parallel software, and distributed-memory programing with mpi. also this course includes shared memory programming with pthreads, and parallel programming development			

5

Code	Course/Module Title	ECTS	Semester
SODE315	Software Design	5	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	0/0/0/2	63	62
Description			
This course explain the design concepts, Fundamental design issues and Interactions between design and requirements. Also understand the design strategies and architectural design. Design for quality attributes (e.g., reliability, usability, maintainability, performance, testability, security, and fault tolerance). Design strategies such as function-oriented design, object-oriented design, and data-structure centered design and aspect-oriented design. Finally study the design evaluation.			

6

Code	Course/Module Title	ECTS	Semester
ETHI316	Ethics	2	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	0/0/0/0	33	17
Description			

Second Course

1

Code	Course/Module Title	ECTS	Semester
WEPR321	Web Programming	8	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
4	0/2/0/1	110	90
Description			
This course is developed skill of Web Based Application by explain some introduction of theworld wide web, the internet and web, the history and growth of the web, internet service provider , Http, the purpose of the web, web application ,The web concepts Hypertext, web page, web site, webpage address. Also explain the Internet TCP/IP , client/server, URL , Web Based Application, web browsing,The classifying the web sites, environment, the general approach, range of complexity, web application ,web page, web site , Classifying the Web Sites (HTML basic tags (head, body, b ,p, I, u sup, sub),(HTML insert image and link to pages (bgcolor, other attribute) image maps , list tags , tables tags , form tags , frameset), JavaScript Introduction , Put a JavaScript into anHTML page , JavaScript Arithmetic (Logical Operators, , Conditional Statement, JavaScript Functions, JavaScript Popup Boxes, Array, Loops JavaScript, JavaScript getElementById).			

2

Code	Course/Module Title	ECTS	Semester
CODE322	Compiler Design	6	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
3	0/2/0/1	95	55

Description
This course introduce some introduction to Compiler, Lexical analysis, Syntax of Analysis, Problems of Compiler. Also includes First and Follow, Top down Parsing, Predictive Parsing Method, LL(1), Bottom up Parsing, Operation Precedence Parser, Simple Left to Right Parser, Canonical LR Parser. In addation to Semantic Analysis, Intermediate Code Generation, Code Optimization, Code Generation.

3

Code	Course/Module Title	ECTS	Semester
INRT323	Information Retrieval Techniques	3	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	0/0/0/1	48	27
Description			
Information Retrieval (IR) definition, Basic concepts, Extraction of index terms, System performance evaluation and the efficiency measures. Searching the Web (full-text database, Web directories, hyperlink structure). IR Versus Web Search, search engines, components of a search engine, browsing, searching using hyperlinks, Web crawling and indexing. understand the text preprocessing lexical analysis, stopwords removal, and stemming. classical ir techniques. samples of modern ir techniques. distributed information retrieval (dir).. clustering in ir			

4

Code	Course/Module Title	ECTS	Semester
COVI324	Computer Visualization	5	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
3	0/2/0/0	80	45
Description			
This subject covers the 3d transformation and viewing, learn how the curve representation, surfaces, designs. bezier curves, b-spline curves, end conditions for periodic b-spline curves, rational b-spline curves are examples of curves. then understand the viewing, lighting and shading			

5

Code	Course/Module Title	ECTS	Semester
MOAD325	Mobile Application Design	5	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
3	0/2/0/0	80	45
Description			
This subject includes introduction of Mobile application design. basics of embedded systems design, advanced design. designing applications with multimedia and web access capabilities and integration with gps and social media networking applications. and accessing applications hosted in a cloud computing environment. technology i – androidand technology ii – ios**.**			

6

Code	Course/Module Title	ECTS	Semester
ENAW326	English Acadimic Writing	3	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	0/0/0/1	48	27
Description			

LEVEL: UGIV

First Course

1

Code	Course/Module Title	ECTS	Semester
OPSY411	Operating System	8	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
4	0/2/0/1	110	90
Description			
The topics of this course includes Operating Systems Definition (Computer-System Architecture, Single-Processor Systems, Multiprocessor Systems, and Clustered Systems). Also the Operating-System Structure (Process Management, Memory Management, Storage Management, User and Operating-System Interface, and System Calls). In addition to Process Concept (Process State, Threads, Process Scheduling and Queues). This course also explain Scheduling Algorithms, Process Synchronization with Critical-Section Problem: Peterson's Solution, Synchronization Hardware, Semaphores and the Dining-Philosophers Problem.			

2

Code	Course/Module Title	ECTS	Semester
MALE412	Machine Learning	5	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
3	0/2/0/0	80	45
Description			
The topics of this course includes introduction (Definition of learning system, Goals and Application of machine learning, Aspect of developing a learning system: training data, concept representation, function approximation), Inductive classification- The concept learning talk(Concept learning as search through a hypothesis space, General – to – specific ordering of hypothesis, Finding maximally specific hypothesis, Find-s), Decision Tree Learning (Representing Concepts as decision tree (Recursive inductive of decision tree, Picking the best splitting attribute: entropy and information gain,), Neural Networks (Artificial neuron concepts, NN Architecture, Supervised &Unsupervised , Activation Functions, learning Rules, perceptron, Hopfield NN, Back Propagation NN, Kohonen NN, Genetic Algorithms (GA concepts, GA Operators, GA Parameters, GA Fitness Function, Genetic Programming, GA Application.			

3

Code	Course/Module Title	ECTS	Semester
DASE413	Data Security	5	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
3	0/0/0/2	80	45
Description			
The topics of this course includes Security, Confidentiality, Threats to confidentiality, Integrity, Availability, Authentication, Non-repudiation, Security Attack, Basic Terminology, Basic Cryptographic Algorithms. Also it includes Cryptographic Random Number Generators, Strength of Cryptographic Algorithms, Cryptanalysis and Attacks on Cryptosystems., Information hiding, Divisor(GCD), (LCM) Least Common Multiple, Modular, Euler Function, Inverse Algorithm Classical Encryption, Monoalphabetic Ciphers, Additive Cipher , Shift Cipher and Caesar Cipher, Multiplicative Ciphers , Affine Ciphers , polybious cipher.			

4

Code	Course/Module Title	ECTS	Semester
WIPR414	Windows Programming	5	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
3	0/2/0/0	80	45
Description			
The topics of this course includes General introduction ,Principles of windows programming, Types of outputs , Types of messages , Key board message, Windows message of char, Windows message of paint, Mouse messages, Double click mouse message, Menu introduction design , Menu messages, Sub menus message, Key board accelerators, Non-menu accelerator keys, Overriding the class menu. Dialog box, Active and Deactivate Dialog box, Added buttons and programming, Added list box and programming, Added Text box and programming, Modeless dialog box, Control and Standard Scroll bar, Check control & auto check control, Radio Buttons control, Stand alone control, Cursor design, Icon design.			

5

Code	Course/Module Title	ECTS	Semester
HUCI415	Human Computer Interaction	3	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	0/0/0/1	48	27
Description			
The topics of this course includes Foundations Contexts for HCI, Designing Interaction, User-Centered Design and Testing. Study the approaches to and characteristics of the design process, Techniques for data gathering and Prototyping techniques. Choosing interaction styles and interaction techniques, Mixed Augmented and Virtual Reality			

6

Code	Course/Module Title	ECTS	Semester

PROJ406	Project	4	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
0	0/3/0/1	62	38
Description			

Second Course

1

Code	Course/Module Title	ECTS	Semester
IMPR421	Image Processing	6	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
3	0/2/0/1	95	55
Description			
This course includes some topics that related of Image Basic concept (Image digitization, Spatial resolution and quantization, Image file formats). Also deals with Arithmetic operation on image, Logical operation on an image, Image histogram, Histogram modification and Histogram equalization. In addition to Image Geometry (crop, zoom, enlarge) and Image compression..			

2

Code	Course/Module Title	ECTS	Semester
DMDW422	Data Mining and Data Warehousing	4	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	0/0/0/2	63	37
Description			
This subject study DataWarehouse, What Is a DataWarehouse? A Multidimensional Data Model such as Stars, Snowflakes, and Fact Constellations: Schemas for Multidimensional Databases and Examples for them. OLAP Operations in the Multidimensional Data Model. Understand the Steps for the Design and Construction of Data Warehouses and DataWarehouse Implementation. Then, this subject introduce Data Miming. What Motivated Data Mining? Why Is It Important? So, What Is Data mining? Relational Databases and Data Warehouses are covered. Characterization and Discrimination, Mining Frequent Patterns, Associations, and Correlations, Classification and Prediction, Cluster Analysis, Outlier Analysis, Evolution Analysis. Data Preprocessing also learn, Mining Frequent Patterns, Associations, and Correlations, Classification by Decision Tree Induction.			

3

Code	Course/Module Title	ECTS	Semester
SESE423	Secure Software Engineering	4	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	0/0/0/2	63	37
Description			
This course includes some topics that related about Fundamentals of secure coding practices covered in other knowledge areas, including SDF and SE. For example, see SE/Software Construction; Software Verification and Validation. • Building security into the software development life cycle (cross- reference SE/Software Processes). Secure design principles and patterns. Secure software specifications and requirements. Secure software development practices (cross-reference SE/Software Construction). Secure testing - the process of testing that security requirements are met (including static and dynamic analysis). Software quality assurance and benchmarking measurements			

4

Code	Course/Module Title	ECTS	Semester
INSM424	Intelligent Search Methods	6	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
3	0/2/0/1	95	55
Description			
The topics of this course includes Principles fundamentals of A.I. What means by A.I. and Knowledge Representation Methods. Control strategy of Search Methods such as Blind Search and Heuristic Search. Study What means by Metaheuristic? And explain some Metaheuristic Algorithms.			

5

Code	Course/Module Title	ECTS	Semester
CONE425	Computer Network	6	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
3	0/2/0/1	95	55
Description			
The topics of this course includes Introduction to data communications. Networks (distributed processing, Network criteria, physical structure, Network models, Network categories). layered tasks (sender, receiver, carrier, hierarchy, OSI MODEL, TCP Model). Physical layer (Transmission Media) Data link Protocols (Error detection and correction). Network Layer, Transport layer, Application layer			

6

Code	Course/Module Title	ECTS	Semester
PROJ406	Project	4	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
0	0/3/0/1	62	38
Description			

Al Mansour University College	كلية المنصور الجامعة	
Bachelor's level (First cycle) - Honors Bachelor degree in Computer Science	(مستوى البكالوريوس)الدورة الأولى(- بكالوريوس مع مرتبة الشرف في علوم الحاسوب	
Four years (Eight semesters) - 240 ECTS credits - 1 ECTS = 25hr	أربع سنوات)ثمانية فصول دراسية(- ٢٤٠ وحدة اوربية - كل وحدة اوربية = ٢٥ ساعة	
Program Curriculum (2023 - 2024)	المنهاج الدراسي للعام ٢٠٢٤-٢	

Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w)						Exam hr/sem	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
							CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)							
UGI	One	1	PRFU111	programming fundamental	اساسيات البرمجة	English	4		2		1		5	110	90	200	8.00	B	
		2	MATH112	Mathematics	الرياضيات	English	4				2		3	93	57	150	6.00	B	
		3	STPR113	statistics and probability	الاحصاء والاحتمالية	English	4				2		3	93	57	150	6.00	B	
		4	DEHR105	Democracy and Human Rights	الديمقراطية وحقوق الانسان	English	2				2		3	33	17	50	2.00	B	
		5	FUCT115	Fundamental of Computer Technology	اساسيات تكنولوجيا الحاسوب	English	2				2		3	63	37	100	4.00	C	
		6	WORK106	Workshop	اللغة العربية	Arabic				3			2	46.5	3.5	50	2.00	S	
						Total	16		2	3	9		19	468.5	281.5	750	30.00		

Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w)						Exam hr/sem	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
							CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)							
UGI	Two	1	STPR121	Structured Programming	البرمجة المهيكلة	English	4		2		1		5	110	90	200	8.00	B	
		2	DIST122	Discrete Structures	الهياكل المتقطعة	English	3				1		3	63	62	125	5.00	B	
		3	LODE123	logic design	التصميم المنطقي	English	3		2		1		5	95	55	150	6.00	B	
		4	SODT124	Software Development Techniques	تقنيات تطوير البرمجيات	English	2				2		3	63	37	100	4.00	C	
		5	SOEN125	Software Engineering	هندسة البرمجيات	English	2		2		1		5	80	45	125	5.00	C	
		6	WORK106	Workshop	المعامل	Arabic				3			2	46.5	3.5	50	2.00	S	
						Total	14		6	3	6		23	457.5	292.5	750	30.00		

Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w)						Exam hr/sem	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
							CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)							
UGII	Three	1	OBOP211	Object Oriented Programming	البرمجة الشيئية	English	4		2		1		5	110	90	200	8.00	B	
		2	DAST212	Data Structures	هياكل بيانات	English	2		2		1		5	80	45	125	5.00	B	
		3	NUAN213	Numerical Analysis	تحليل عددي	English	2		2		1		5	80	45	125	5.00	B	
		4	ADSE214	Advance Software Engineering	هندية برامجيات متقدمة	English	2		2		1		5	80	45	125	5.00	C	
		5	ANDA215	Analysis and Design of Algorithms	تحليل وتصميم الخوارزميات	English	2		2		1		5	80	45	125	5.00	C	
		6	ENLA216	English language	اللغة الانكليزية	English	2						3	33	17	50	2.00	S	
						Total	14		10		5		28	463	287	750	30.00		

Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w)						Exam hr/sem	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
							CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)							
UGII	Four	1	DATA221	DataBase	قواعد البيانات	English	4		2		1		5	110	90	200	8.00	B	
		2	MICR222	Microprocessor	معالجات ميكروية	English	3		2		1		5	95	55	150	6.00	B	
		3	SOSA223	Sorting and Searching Algorithms	خوارزميات البحث والترتيب	English	2		2		1		5	80	45	125	5.00	B	
		4	COCO224	Computational Complexity	احتساب التعقيد	English	2				2		3	63	37	100	4.00	C	
		5	SOMA225	Software Modelling and analysis	نمذجة وتحليل البرمجيات	English	2		2		1		5	80	45	125	5.00	C	
		6	HURI226	Human Rights	حقوق الانسان	Arabic	2						3	33	17	50	2.00	S	
						Total	15		8		6		26	461	289	750	30.00		

Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w)						Exam hr/sem	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
							CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)							
UGIII	Five	1	COAR311	Computer Architecture	معمارية الحاسوب	English	3		2		1		5	95	55	150	6.00	B	
		2	COTH312	Computation Theory	نظرية احتسابية	English	3				2		3	78	47	125	5.00	B	
		3	COGR313	Computer Graphics	رسوم الحاسوب	English	3		2		1		5	95	55	150	6.00	C	
		4	PAPP314	Parallel Programming Paradigms	صيغ البرمجة المتوازية	English	3		2		1		5	95	55	150	6.00	C	
		5	SODE315	Software Design	تصميم البرمجيات	English	2				2		3	63	62	125	5.00	C	
		6	ETHI316	Ethics	اخلاقيات	Arabic	2						3	33	17	50	2.00	S	
						Total	16		6		7		24	459	291	750	30		

Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w)						Exam hr/sem	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
							CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)							
UGIII	Six	1	WEPR321	Web Programming	برمجة المواقع	English	4		2		1		5	110	90	200	8.00	B	
		2	CODE322	Compiler Design	تصميم المترجمات	English	3		2		1		5	95	55	150	6.00	B	
		3	INRT323	Information Retrieval Techniques	تقنيات استرجاع المعلومات	English	2				1		3	48	27	75	3.00	C	
		4	COVI324	Computer Visualization	الرؤيا بالحاسوب	English	3		2				5	80	45	125	5.00	C	
		5	MOAD325	Mobile Application Design	تصميم تطبيقات الموبايل	English	3		2				5	80	45	125	5.00	C	
		6	ENAW326	English Acadimic Writing	انكليزية الكتابة الاكاديمية	English	2				1		3	48	27	75	3.00	S	
						Total	17		8		4		26	461	289	750	30		

Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w)						Exam hr/sem	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
							CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)							
UGIV	Seven	1	OPSY411	Operating System	نظم تشغيل	English	4		2		1		5	110	90	200	8.00	B	
		2	MALE412	Machine Learning	تعلم الماكنة	English	3		2				5	80	45	125	5.00	C	
		3	DASE413	Data Security	امنية البيانات	English	3		2				5	80	45	125	5.00	C	
		4	WIPR414	Windows Programming	برمجة النوافذ	English	3		2				5	80	45	125	5.00	C	
		5	HUCI415	Human Computer Interaction	تفاعل الانسان مع الحاسوب	English	2				1		3	48	27	75	3.00	C	
		6	PROJ406	Project	المشروع	English			3		1		2	62	38	100	4.00	C	
						Total	15		11		3		25	460	290	750	30		

Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w)						Exam hr/sem	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
							CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)							
UGIV	Eight	1	IMOR421	Image Processing	معالجة صور	English	3		2		1		5	95	55	150	6.00	C	
		2	DMDW422	Data Mining and Data Warehousing	تعدين البيانات ومستودعات البيانات	English	2				2		3	63	37	100	4.00	C	
		3	SESE423	Secure Software Engineering	هندسة البرمجيات الامنة	English	2				2		3	63	37	100	4.00	C	
		4	INSM424	Intelligent Search Methods	طرق البحث الذكية	English	3		2		1		5	95	55	150	6.00	C	
		5	CONE425	Computer Network	شبكات الحاسوب	English	3		2		1		5	95	55	150	6.00	C	
		6	PROJ406	Project	المشروع	English			3		1		2	62	38	100	4.00	C	
						Total	13		9		8		23	473	277	750	30		

						Total	120		60		48		194	3703	2297	6000	240		Must be 240 ECTS

Note: The student should complete 4 weeks of Summer Internships to fullfil the requirements of the Bachelor of Science degree

CL	Class Lecture	B	Basic learning activities	SWL:	Student Workload		
Lab	Laboratory	C	Core learning activity	SSWL:	Structured SWL		

Structured SWL (hr/w) type	**Pr**	Practical Training		**S**	Suport or related learning activity	**USSWL:**	Unstructured SWL
	Tut	Tutorial		**E**	Elective learning activity		
	Lect	Online lecture					
	Semn	Seminar					

		6																	

	Ministry of Higher Education and Scientific Research - Iraq AL-Mansour University College Computer Science Department	

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Programming fundamental**			**Module Delivery**	
Module Type	CORE			**-Theory Lecture** **-Lab** **-PracticalSeminar**	
Module Code	PRFU111				
ECTS Credits	8				
SWL (hr/sem)	200				
Module Level		1	**Semester of Delivery**		1
Administering Department			**College**		
Module Leader	Assit.Lec zaid saeb sabri		**e-mail**	zaid.saeb@muc.edu.iq	
Module Leader's Acad. Title		Assit.Lecturer	**Module Leader's Qualification**		M.Sc.
Module Tutor	None		**e-mail**	None	
Peer Reviewer Name			**e-mail**		
Review Committee Approval			**Version Number**		

Relation With Other Modules العالقة مع المواد الدراسية ألخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الارشادية	
Module Aims أهداف المادة الدراسية	1. To develop problem solving skills 2. This course deals with the basic concept of Algorithms. 3. To understand the meaning of programming.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Understanding the meaning of algorithms and how to write it 2. Understand the various types of data 3. Learn how to draw flowchart. 4. Understanding the main data types in C++ , and logical and mathematics operations 5. Capable of writing While an For statements in the program. 6. Have the ability to use conditions (IF , IF else) statements
Indicative Contents المحتويات الارشادية	1. Explain the steps involved in problem definition and analysis. 2.Learn how to write algorithm and draw the flowchart to solve a particular problem 3. Define program that capable of reading and printing data. 4. Learn how to repeat execution of a block of statements (While, For) 5. Learn how to use conditions in the program
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	102	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	7
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	98	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	7
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	200		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	1	10% (10)	5	LO # 1 and 3
	Practical Seminar(Lab).	2	15% (15)	Continuous	LO # 2 , 4 and 5
Summative assessment	**Midterm Exam**	1 hr	15% (15)	14	LO # 1 to 5
	Final Exam	3hr	60% (60)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج االسبوعي النظري

	Material Covered
Week 1	• Introduction, Procedural Programming Principles • Introduction to algorithm • Algorithms example
Week 2	• Flowchart definition and its symbols • Flowchart examples
Week 3	• C++ programming language • Structure of C++ program • Reserved words and Header files • Character set and Identifiers • Variable and Constant • Data type (int , float , char , void) • Cout , Cin

Week 4	• Constant • % operator • IF statement • Compound IF statement • IF / ELSE statement
Week 5	**Quizzes**
Week 6	• && , || with if statement • ELSE IF statement
Week 7	• Switch statement • Nested switch statement
Week 8	• C++ operators : Arithmetic , Assignment ,Comparison ,Logical • Operators precedence
Week 9	• Unary operators (++ , --) • Prefix ,Postfix notation
Week 10	• Examples of order evaluation • "math.h" library : Exp,Log,Sin, Cos,Tan,Pow,Sqrt
Week 11	• While statement
Week 12	• Do / While statement
Week 13	• For loop statement
Week 14	**Midterm Exam**
Week 15	**Preparatory Week**
Week 16	**Final Exam**

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Introduction to C++ environment
Week 2	Introduction to C++ environment
Week 3	• C++ programming language • Structure of C++ program • Reserved words and Header files • Character set • Variable and Constant • Data type (int , float , char , void) • Cout , Cin

Week 4	• IF statement • Compound IF statement • IF / ELSE statement • Constant • % operator
Week 5	**Quizzes**
Week 6	• && , || with if statement • ELSE IF statement
Week 7	• Switch statement • Nested switch statement
Week 8	• C++ operators : Arithmetic , Assignment ,Comparison ,Logical • Operators precedence
Week 9	• Unary operators (++ , --) • Prefix ,Postfix notation
Week 10	• Examples of order evaluation • "math.h" library : Exp,Log,Sin, Cos,Tan,Pow,Sqrt
Week 11	While statement
Week 12	Do / While statement
Week 13	For loop statement

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Mastring C++, Amman-Jordan, AL-Shorok, 2002	Yes
Recommended Texts	1- OqeiliSalch, prof. Department of IT-AL-Balqa Applied University. .	No
Websites		

APPENDIX:

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

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

	Ministry of Higher Education and Scientific Research - Iraq AL-Mansour University College Computer Science Department	

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information
معلومات المادة الدراسية

Module Title	**Mathematics**	**Module Delivery**	
Module Type	CORE	**Theory** **Lecture** **Lab** **Tutorial** **Practical** **Seminar**	
Module Code	**MATH112**		
ECTS Credits	**6**		
SWL (hr/sem)	**150**		
Module Level	1	**Semester of Delivery**	1
Administering Department	Type Dept. Code	**College**	Type College Code
Module Leader		**e-mail**	
Module Leader's Acad. Title		**Module Leader's Qualification**	
Module Tutor	None	**e-mail**	None
Peer Reviewer Name		**e-mail**	
Review Committee Approval		**Version Number**	

Relation With Other Modules
العالقة مع المواد الدراسية ألخرى

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

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

Module Aims اهداف المادة الدراسية	1. To learn how solve and develop problem solving skills
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Learning how solve equations by hand without computer. 2. Develop the brain ability.
Indicative Contents المحتويات الارشادية	Indicative content includes the following. ➢ Mathematical background ➢ Matrix • Types of matrix • Matrix addition, subtraction, and multiplication • Determinant, transpose, symmetric of matrix and rank of matrix • Inverse of matrix, absolute value, and polynomials • Grammar rule for solving system of equation. ➢ Functions • Function Definition • Domain and range of functions • Graphing of function ➢ Limits • Definition of limits • Theorems of limits • Type of limits • One side and two sides limits • Limits as infinity • Sandwich theorem and continues functions ➢ Derivation • Mathematical definition of derivation, rule of derivation • Derivation of trigonometric, inverse trigonometric, logarithm, exponential hyperbolic, inverse of hyperbolic function. • Implicit derivation, chain rule, higher derivation ➢ Derivation • L'hopital rule • Application of derivation, velocity and acceleration ➢ Series ➢ Integration

	• Indefinite integral • Rules of integral • Method of integration • Multiple integral • Definite integral • Application of integral area under the curve • Area between two curves

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	86	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	64	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4.5
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**	1	5% (5)	5, 10	LO #1 and 2
	Assignments	1	3% (3)	2, 12	LO #1 and 2
	Projects / Lab.				
	Report	1	2%(2)	13	LO #1 and 2
Summative assessment	**Midterm Exam**	2 hr	20% (20)	7	LO #1 and 2
	Final Exam	3hr	70% (70)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	➢ Mathematical background ➢ Matrix Types of matrix, Matrix addition, subtraction, and multiplication, Determinant, transpose, symmetric of matrix and rank of matrix
Week 2	Inverse of matrix, absolute value, and polynomials, Grammar rule for solving system of equation.
Week 3	➢ Functions , Function Definition, Domain and range of functions
Week 4	Graphing of function
Week 5	➢ Limits Definition of limits, Theorems of limits, Type of limits, One side and two sides limits.
Week 6	Limits as infinity Sandwich theorem and continues functions
Week 7	➢ Derivation Mathematical definition of derivation, rule of derivation Derivation of trigonometric, inverse trigonometric, logarithm, exponential.
Week 8	Derivation of hyperbolic, inverse of hyperbolic function
Week 9	Implicit derivation, chain rule, higher derivation
Week 10	L'hopital rule, Application of derivation, velocity and acceleration.
Week 11	➢ Series
Week 12	➢ Integration Indefinite integral, Rules of integral.
Week 13	Method of integration
Week 14	Multiple integral, Definite integral, Application of integral area under the curve, Area between two curves.
Week 15	**Preparatory Week**
Week 16	**Final Exam**

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر(ليس مرتبط بمختبر)

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	**Thomas,G. Calculus and Analytic Geometry,Fifth Edition,AdditionWesly,1999**	Yes
Recommended Texts		
Websites	https://youtube.com/@soraali5120	

APPENDIX:

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

	Ministry of Higher Education and Scientific Research - Iraq AL-Mansour University College Computer Science Department	

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information
معلومات المادة الدراسية

Module Title	STATISTICS AND PROBABILITY	**Module Delivery**	
Module Type	CORE	**Theory** **Lecture** **Tutorial** **Practical**	
Module Code	STPR113		
ECTS Credits	6		
SWL (hr/sem)	150		
Module Level	1	**Semester of Delivery**	1
Administering Department	Type Dept. Code	**College**	Type College Code
Module Leader		**e-mail**	
Module Leader's Acad. Title		**Module Leader's Qualification**	
Module Tutor	None	**e-mail**	None
Peer Reviewer Name		**e-mail**	
Review Committee Approval		**Version Number**	1.0

Relation With Other Modules
العلاقة مع المواد الدراسية الاخرى

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

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الارشادية

Module Aims أهداف المادة الدراسية	1. Understand the laws of statistics and data distribution. 2. Enable the student to transform large data into understandable shapes and illustrations, and to deduce statistical data. 3. provide the students with details statistics and data population. 4. Define and explain the basic of probabilistic metrics like event, outcome, trial, simple event, sample space, Venn Diagram ,tree diagram, and calculate the probability that an event will occur. 5. Define and explain the basic of statistical measurements like Data Organization, variation, of central tendency. 6. Express the concepts and principal of counting techniques (factorial , combination) and the basic principles of Probability Theory 7. Solve the problems about permutation, combination and Binomial Theorem.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. provide the students with details Probability and its theories and how apply them on game theory. 2. Enable the student to transform large data into understandable shapes and illustrations, and to deduce statistical data 3. Express the concept of probability and its features. Explain the concept of a random event, addition and multiplication probabilities lows . 4. Understand the laws of statistics and data distribution 5. Express the concepts of factorial and the basic principal of counting. Solve the problems about permutation, combination and Binomial Theorem. 6. enable the students with knowledge of the problems and solutions that may face in future and depend on probability theory to solve them
Indicative Contents المحتويات الارشادية	<u>Part A - statistic</u> 1-Population, samples, type of samples, Random variables discrete variable, continuous variable, Data Organization. [4] 2- frequency distribution, histogram [8] 3- Measurement of central tendency - mean, median, mode. [6]. 4- measurements of variation -standard deviation, variance.[6] 5- Coefficient of variation, Correlation and Regression. [8]

	Part b – probability. 1- Probability Theory -sample space, events, rules of probability. [4] 2- Venn Diagram, tree diagram, probability theorems -Addition theorem.[4] 3- Multiplication theorem.[4] 4- Combinations ,Conditional probability[4] 5- Bayes theorem, Independent of events, Discrete Probability distributions.[4] 6- Binomial distribution, Multinomial distribution.[4] 7- Poisson distribution, Continuous Probability Distributions-Uniform distribution.[4] 8- Normal distribution, Exponential distribution[4].

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 examples 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	86	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	64	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4.5
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
	Quizzes	2	6% (10)	5, 10	LO #2,4, and 5

Formative assessment	**Assignments**	2	4% (10)	2, 12	LO # 2 and 5
Summative assessment	**Midterm Exam**	1 hr	20% (10)	7	LO # 1-5
	Final Exam	2hr	70% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Population ,samples , type of samples, Random variables discrete variable, continuous variable, Data Organization.
Week 2	frequency distribution, histogram
Week 3	measurement of central tendency - mean ,median, mode.
Week 4	measurements of variation -standard deviation, variance ,coefficient of variation
Week 5	Probability Theory -sample space, events ,rules of probability, Venn Diagram.
Week 6	tree diagram, probability theorems -Addition theorem.
Week 7	Mid-term Exam
Week 8	Multiplication theorem.
Week 9	Counting techniques :Factorial, Permutations, Combinations ,Conditional probability
Week 10	Bayes theorem, Independent of events, Discrete Probability distributions.
Week 11	Binomial distribution, Multinomial distribution.
Week 12	Poisson distribution, Continuous Probability Distributions-Uniform distribution.
Week 13	Normal distribution, Exponential distribution.
Week 14	Correlation and Regression.
Week 15	**Preparatory Week**
Week 16	**Final Exam**

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	**Available in the Library?**
Required Texts		Yes

	1. Probability and statistics, theory and applications, Gunnar Blom 2. Probability and statistics for engineers, Richard L. Scheaffer 3. Statistics: theories and applications, Joseph Inungo, 2006. 4. Introductory Statistics , Ronald J. Wonnacott	
Recommended Texts	Introduction to Statistics and Data Analysis	No
Websites	https://www.spps.org/cms/lib/MN01910242/Centricity/Domain/859/Statistics%20Textbook.pdf	

APPENDIX:

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

Note:

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

	Ministry of Higher Education and Scientific Research - Iraq AL-Mansour University College Computer Science Department	

MODULE DESCRIPTOR FORM
نموذج وصف المادةالدراسية

Module Information
معلومات المادة الدراسية

Module Title	Fundamental of Computer Technology	**Module Delivery**	
Module Type	CORE	**Theory** **Lecture** **Tutorial**	
Module Code	FUCT115		
ECTS Credits	4		
SWL (hr/sem)	100		
Module Level	1	**Semester of Delivery**	1
Administering Department	Type Dept. Code	**College**	Type College Code
Module Leader	Assit.Lec Mustafa Muhanad m.salih	**e-mail**	Mustafa.muhanad@muc.edu.iq
Module Leader's Acad. Title	Assist.Lecture	**Module Leader's Qualification**	M.s.c
Module Tutor	None	**e-mail**	None
Peer Reviewer Name		**e-mail**	
Review Committee Approval		**Version Number**	

Relation With Other Modules
العلاقة مع المواد الدراسية الاخرى

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الارشادية	
Module Aims اهداف المادة الدراسية	1. This course deals with the basic concept of Computer Technology. 2. This is the basic subject for all Computer Technology subject.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Recognize Computer Technology. 2. List the various terms associated with Computer Technology. 3. Summarize what is meant by Computer Technology.
Indicative Contents المحتويات الارشادية	1. Explain the main concept involved in Computer Technology. 2.Learn what are terms associated with Computer Technology.
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	58	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	42	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3
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	10% (10)	5, 10	LO #1, 2, and 3
	Assignments	2	10% (10)	2, 12	LO #1, 2, and 3
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	10% (10)	13	LO #1, 2, and 3
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO #1, 2, and 3
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Software - Software types - Software characteristics
Week 2	Programming language basics - Low level (assembly) language - High level language
Week 3	Understanding Applications - Desktop applications - Mobile applications
Week 4	Understanding the Cloud - What is the cloud - Why use the cloud - What is a web application
Week 5	Software Development programs - Editor - Translator - Linking loader - Debugger
Week 6	Database fundamentals
Week 7	Mid-term Exam + Unit-Step Forcing, Forced Response, the RLC Circuit
Week 8	Operating system basics
Week 9	Software Development process
Week 10	Software analysis

	- Flowchart
Week 11	Software Design - Data flow diagram (DFD) - Walkthrough
Week 12	Software Design - Data flow diagram (DFD) - Walkthrough
Week 13	Safety and Maintenance - Keeping Your Computer Clean - Protecting Your Computer - Creating a Safe Workspace
Week 14	Safety and Maintenance - Keeping Your Computer Clean - Protecting Your Computer - Creating a Safe Workspace
Week 15	**Preparatory Week**
Week 16	**Final Exam**

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	- Foundations of Computer Technology, By Alexander John Anderson.	No

APPENDIX:

GRADING SCHEME
مخطط الدرجات

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

Note:				

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

First and Second Semester

Module 1

Module Information			
Module Title	Workshops		Module Delivery
Module Type	Support		☐ Theory ☐ Lecture ☐ Lab ☐ Tutorial ■ Practical ☐ Seminar
Module Code	WORSH11		
ECTS Credit/year	4		
SWL/year	100		
Module level	1	Semester of Delivery	1, 2
Module Leader	Training and Workshops Center	College	
Module Leader Academic Title	Prof.	e-mail	twc@uotechnology.edu.iq
Module Tutor		Module Leader's Qualification	Ph.D.
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date	1/6/2023	e-mail	
		Version Number	1

Relation with other Modules			
Prerequisite Module	-	Semester	-
Co-requisite Module	-	Semester	-

Module Aims, Learning Outcomes and Inductive Contents	
Module Aims	1-Preparing applied engineers in the field of engineering sciences who are distinguished by a high level of knowledge and technological creativity, in line with the strict standards adopted globally in quality assurance and academic accreditation of the corresponding engineering programs, while adhering to the ethics of the engineering profession. 2. Enable the student to know and understand work systems, risks, and the factors surrounding them. 3. Enable the student to know and understand theoretical principles in handicrafts and measurements.
Module Learning Outcomes	1- To familiarize the student with the vocabulary of occupational safety and its importance in the field of work. 2- Acquisition of the student's manual operation skills, for example (Filings and

	Tinsmith workshops), and mechanical operation skills, for example (Turning). 3- Acquisition of the student's mechanical forming skills, for example (Casting and Blacksmithing). 4- The student acquires basic engineering skills such as Welding, Carpentry, and Electrical installations that serve him in the professional field. 5- Enabling the student to operate the various machines and devices in mechanical operations and formation. 6- Cooperative learning by working collectively.
Inductive Contents	1. Introducing the student to the basics of the art of turning and milling, types of cold working machines, the skill of dealing with them, choosing metals, operational tools, and methods of measurement and standardization 2. Introducing the student to the basics of the art of casting, hot forming, metal selection, method of working on casting furnaces and tools, and manufacturing casting molds 3. Familiarize students with the basics of cars and the systems they use, as well as maintenance, disassembly, and assembly processes. 4. Introducing students to the basics of household and industrial electrical appliances, the skill of using tools, and designing electrical circuits and control panels 5. Introducing the student to the basics of the art of plumbing, leveling surfaces, the skill of using tools, manufacturing and installing geometric shapes, and methods of measurement and standardization 6. Introducing the student to the basics of the art of blacksmithing, cold and hot forming of metals, the method of hardening them, and the skills of dealing with hand tools, forming machines, and heating furnaces 7. Introducing the student to the basics of the art of filing and manual operation of metals with the help of manual, electrical, and mechanical tools, the skills of dealing with them, and the methods of measurement and standardization 8. Introducing the student to the basics of the art of welding, the installation and assembly of metals, the types of welding machines, the skills of dealing with them, the types of welding, and the methods of measurement and standardization 9. Introducing the student to the basics of the art of carpentry and woodworking with the help of manual, electrical, and mechanical tools, the skills of dealing with them, and methods of measurement and standardization

Learning and Teaching Strategies	
Strategies	

Student Workload (SWL)			
Structured SWL (h/sem)	46.5	Structured SWL (h/w)	3.00
Unstructured SWL (h/sem)	3.5	Unstructured SWL (h/w)	0.23
Total SWL (h/sem)	50		
Structured SWL (h/year)	93	Structured SWL (h/w)	3.00
Unstructured SWL (h/year)	7	Unstructured SWL (h/w)	0.23
Total SWL (h/year)	100		

Module Evaluation					
		Time/No.	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative Assessment	Quizzes				
	Assignments				All
	Projects / Practice	Every 3 weeks	60%	Continuous	
	Report				
Summative Assessment	Midterm Exam				
	Exam	Every 3 weeks	40%	Continuous	All
Total assessment			100%		

Delivery Plan (Weekly Syllabus)	
	Materials Covered
Week 1	Welding workshop. -Occupational safety and its importance in welding workshops. -Introduction to the basics of welding. -Electric arc exercise. -An exercise for welding straight lines in a circular motion (helical).
Week 2	Welding workshop - An exercise for welding straight lines with a crescent movement and other welding methods -Construction welding exercise.
Week 3	Welding workshop. -Welding two pieces together. -Written exam in practical exercises. -
Week 4	Casting workshop -Occupational safety and its importance in plumbing workshops.

	-Introduction to the basics of metal casting. -Simple wooden disc exercise. Half workout.
Week 5	Casting workshop Wheel exercise. Pushing arm exercise.
Week 6	Casting workshop. -Complete pulley exercise. -Circular pole exercise. -Written exam in practical exercises.
Week 7	Blacksmith Workshop -Occupational safety and its importance in blacksmithing workshops. -Introduction to the Basics of Blacksmithing. - Barbell adjustment exercise. -Eight-star exercise. - Exercise forming the number eight in English. -Six formation exercises in English.
Week 8	Blacksmith Workshop -An exercise forming the number five in English. - Exercise forming the number nine in English. -An exercise in forming an iron model in the form of a circle .
Week 9	Blacksmith Workshop - S-shape exercise. - Air hammer hot barbell exercise. - Exercise to form a circle on an electric bending machine. - Exercising cold and hot ornament formation. - A written exam in practical exercises .
Week 10	Automotive Workshop -Occupational safety and its importance in car maintenance workshops. -An introduction to cars and their basic parts. -Parts of the engine, how it works, types of engines, and methods of classification.
Week 11	Automotive Workshop - Open the engine and identify the parts -Lubrication system -Cooling system.
Week 12	Automotive Workshop -The fuel system. -The old and new ignition circuits. -Written exam in practical exercises.
Week 13	Turning Workshop -Introduction to lathe machines and identifying their parts -Measuring tools and the use of an oven measuring instrument

	-Circular column lathing exercise on different diameters.
Week 14	Turning Workshop -Exercise using the pen (semicircular R) brackets. An exercise in making different angles using a pen (square + angle pen 55).
Week 15	Turning Workshop - Making shaft with different diameter exercises using (left and right pen) - Workout (Tube Connection). -Written exam in practical exercises.
Week 16	Fitting workshop Occupational safety and its importance in filing workshops -An introduction to the basics of filing -Pen holder exercise “preparation and preparation”
Week 17	Fitting workshop Pencil holder exercises finishing and assembling.
Week 18	Fitting workshop -The catcher exercise. - Clamping exercise. Written exam in practical exercises.
Week 19	Carpentry workshop -Occupational safety and its importance in carpentry workshops. - An introduction to carpentry, its types, types of wood, tools used, and preparation Preparing the tools used Face modification exercise using the reindeer
Week 20	Carpentry workshop Garden fence work and how to connect its parts, the eight-star exercise
Week 21	Carpentry workshop - Wood smoothing exercise using smoothing paper - Wood dyeing exercise in three stages Final smoothing and varnishing exercise Written exam in practical exercises
Week 22	The tinsmith workshop Occupational safety and its importance in plumbing workshops An introduction to plumbing, its tools, and plumbing stages Planning and marking exercise on metal plates
Week 23	The tinsmith workshop Geometric shapes Types of individuals and methods of individuals Geometric shape individuals exercise on a metal board
Week 24	The tinsmith workshop Cone members exercise

	- Exercise of cylinders with an oblique cut Roll forming operations Connection without the use of an intermediary Written exam in practical exercises
Week 25	Electric Workshop Occupational Safety and its importance in electrical workshops An introduction to the basics of electrical installations - Linking a simple circuit consisting of a lamp to the control of a single-way switch. Connect two lamps in series with one-way switch control. Connecting two lamps in parallel with the control of a single road switch. Connect two lights with one-way dual switch control.
Week 26	electric Workshop Connect a fluorescent lamp circuit to a one-way switch control Connecting an electric supply socket circuit to the control of a separate or combined one-way switch Written exam in practical exercises
Week 27	electric Workshop Occupational Safety and its importance in blacksmithing workshops Introduction to the basics of Blacksmithing - Barbell adjustment exercise Eight-star exercise - Exercise forming the number eight in English Exercise forming the number six in English
Week 28	supplementary training curriculum Welding workshop Plumbing workshop Blacksmith's workshop
Week 29	supplementary training curriculum - Automotive workshop - Turning workshop Fitting workshop
Week 30	supplementary training curriculum Carpentry workshop The plumbing workshop electric Workshop

Learning and Teaching Resources		
	Text	Available in the library
Required Texts	Workshop technology and measurements, Ahmed Salem Al-Sabbagh,	yes

Recommended Texts		
Websites		

	Ministry of Higher Education and Scientific Research - Iraq AL-Mansour University College Computer Science Department	

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information
معلومات المادة الدراسية

Module Title	STRUCTURED PROGRAMMING	**Module Delivery**	
Module Type	CORE		**-Theory Lecture** **-Lab** **-PracticalSeminar**
Module Code	STPR121		
ECTS Credits	8		
SWL (hr/sem)	200		

Module Level	1	**Semester of Delivery**	2
Administering Department		**College**	
Module Leader	Assist.Lec:zaid saeb sabri	**e-mail**	zaid.saeb@muc.edu.iq
Module Leader's Acad. Title	Assist.Lec	**Module Leader's Qualification**	M.S.c
Module Tutor	None	**e-mail**	None
Peer Reviewer Name		**e-mail**	
Review Committee Approval		**Version Number**	

Relation With Other Modules
العلاقة مع المواد الدراسية الاخرى

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الارشادية	
Module Aims أهداف المادة الدراسية	1. Teaching the students the concept of the array , performing many operation on them. 2. Studying the functions and how to call then and passing values to them. 3. Teaching students strings manipulate 4. Teaching student the pointers and the structures in C++
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Understanding the meaning of one dimension array 2. Understanding the meaning of two dimension array 3. Perform operations on arrays. 4. Understanding the concept of function and who to return values from them 5. Learn how to pass parameters to functions 6. Capable of using string and manipulate them in the program 7. Give the student the ability of using pointers and structures in there programs
Indicative Contents المحتويات الارشادية	1- Explain how to define one dimension and two dimension array 2- Define functions with their various types. Explain how to use strings in the program 3- Let the students see many examples about pointers and structures and there effects on the programs
Learning and Teaching Strategies ستراتيجيات 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	102	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	7
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	98	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	7
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	200		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	1	10% (10)	5	LO # 1 and 3
	Practical Seminar(Lab).	2	15% (15)	Continuous	LO # 2 , 4 and 5
Summative assessment	**Midterm Exam**	1 hr	15% (15)	14	LO # 1 to 5
	Final Exam	3hr	60% (60)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	• **Functions, program in functions** • **Passing parameters**
Week 2	• **Arrays: one dimensional array**
Week 3	• **Arrays: two dimensional array**
Week 4	• **Array and functions**
Week 5	**Quizzes**
Week 6	• **Strings**
Week 7	• **Member function of strings**
Week 8	• **Structure : Type of Structure declaration**
Week 9	• **Array of Structures**

Week 10	• **Structure within structure** • **Functions and structures**
Week 11	• **pointers declaration** • **pointers and functions parameters passing**
Week 12	• **Pointers and arrays**
Week 13	• **Arrays of pointers** • **pointers to pointers**
Week 14	**Midterm Exam**
Week 15	**Preparatory Week**
Week 16	**Final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	• **Functions, program in functions** • **Passing parameters**
Week 2	• **Arrays: one dimensional array**
Week 3	• **Arrays: two dimensional array**
Week 4	• **Array and functions**
Week 5	**Quizzes**
Week 6	• **Strings**
Week 7	• **Member function of strings**
Week 8	• **Structure : Type of Structure declaration**
Week 9	• **Array of Structures**
Week 10	• **Structure within structure** • **Functions and structures**
Week 11	• **pointers declaration** • **pointers and functions parameters passing**
Week 12	• **Pointers and arrays**
Week 13	• **Arrays of pointers** • **pointers to pointers**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Mastring C++, Amman-Jordan, AL-Shorok, 2002	Yes
Recommended Texts	1- OqeiliSalch, prof. Department of IT-AL-Balqa Applied University.	No
Websites		

APPENDIX:

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

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

	Ministry of Higher Education and Scientific Research - Iraq AL-Mansour University College Computer Science Department	

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information
معلومات المادة الدراسية

Module Title	Discrete Structures	**Module Delivery**	
Module Type	CORE	**Theory** **Lecture** **Lab** **Tutorial** **Practical** **Seminar**	
Module Code	DIST122		
ECTS Credits	5		
SWL (hr/sem)	125		
Module Level	1	**Semester of Delivery**	2
Administering Department	Type Dept. Code	**College**	Type College Code
Module Leader	Assit.Lec mohanad haizm	**e-mail**	mohanad.hazim@muc.edu.iq
Module Leader's Acad. Title	Assit.Lec	**Module Leader's Qualification**	M.S.c
Module Tutor	None	**e-mail**	
Peer Reviewer Name		**e-mail**	
Review Committee Approval		**Version Number**	

Relation With Other Modules
العلاقة مع المواد الدراسية الاخرى

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

Module Aims, Learning Outcomes and Indicative Contents

هداف المادة الدراسية ونتائج التعلم والمحتويات الارشادية	
Module Aims أهداف المادة الدراسية	1. The study of fundamentally discrete mathematical structures, in the sense of not supporting the concept of continuity. 2. Studying computer data representation methods that achieve easy storage and retrieval and processing speed. 3. Logical formulas are described by the discrete structure, which is used to create directed acyclic graph structures and finite trees. A finite set is produced by the truth values of logical formulas.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. The ability to develop and conduct appropriate experiments, analyse and interpret data, and use engineering judgment to draw conclusions 2. Ability to acquire and apply new knowledge as needed, using appropriate learning strategies. Topics include: sets, number bases, mathematical induction, relations, functions, graphs, trees,
Indicative Contents المحتويات الارشادية	Indicative content includes the following. ➢ Set theory • Sets and subsets • How to specify sets, Operations on sets • Algebra of sets and its proves • Power set, Classes of sets, Cardinality • Sets of numbers, Finite sets and counting principle ➢ Mathematical induction ➢ Relations • Computer representation of relations and Digraph • Manipulation of relations, Properties of relations • Composition of relations ➢ Functions • Type of function (one-to-one & invertible function) • Geometrical characterization of functions • Sequences of sets, Recursively defined functions ➢ Graphs • Definition, Graphs. Sub graph, and multigraphs • Degree of graph, Connectivity, Special graph • Walk & length of walk, Trail, path, cycle • The bridges of Konigsberg • Traversable multigraphs, Labeled graphs • Minimal path, Minimum spanning tree • Matrices and graph • Trees, rooted tree, ordered rooted tree

	• polish notation, with examples ➢ Finite state machines • Finite automata • Optimistic approach to construct FSM • Deterministic Finite state automata

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	The main strategy that will be adopted in delivering this module is to: 1. 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. 2. Use Live electronic lectures - video lectures 3. Solve practical examples

Student Workload (SWL)
الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	58	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	42	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**		5% (5)		
	Assignments		5% (5)		
	Projects / Lab.				
	Report				
Summative assessment	**Midterm Exam**		20% (20)		
	Final Exam		70% (70)		
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	**Set theory-sets & subsets, how to specify sets, operations on sets,**
Week 2	**Algebra of sets and its proves, Power set, Classes of sets, Cardinality.**
Week 3	**Sets of numbers, Finite sets and counting principle**
Week 4	**Mathematical induction**
Week 5	**Computer representation of relations and Digraph, Manipulation of relations.**
Week 6	**Properties of relations, Composition of relations**
Week 7	**Type of function (one-to-one & invertible function), Geometrical characterization of functions**
Week 8	**Mid Exam**
Week 9	**Sequences of sets, Recursively defined functions, Definition, Graphs. Sub graph, and multigraphs**
Week 10	**Degree of graph, Connectivity, Special graph, Walk & length of walk, Trail, path, cycle**
Week 11	**The bridges of Konigsberg, Traversable multigraphs, Labeled graphs, Minimal path, Minimum spanning tree**
Week 12	**Matrices and graph, Trees, rooted tree, ordered rooted tree, polish notation, with examples**
Week 13	**Finite state machines: Finite automata**
Week 14	**Optimistic approach to construct FSM, Deterministic Finite state automata**
Week 15	**Preparatory Week**
Week 16	**Final Exam**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	• **Theory and problems of Discrete mathematics, by Seymour Lipschutz & Marc Lars Lipson, Schaum's Outline Series, third edition 2007** • **Mathematical foundation of computer science, Y.N. Singh, 2005.** • **Discrete Mathematics and Its Applications, Seventh Edition, Kenneth H. Rosen, AT&T Laboratories, 2012**	

Recommended Texts		No
Websites	• **DISCRETE STRUCTURES, AMIN WITNO, Revision Notes and Problems 2006, www.witno.com** • **Discrete mathematical structures for computer science by BernardKolman &Robert C. Busby** • **Discrete mathematics for New technology, Rowan Garnier, & John Taylor (Second Edition 2002).** **http://www.math.uvic.ca/faculty/gmacgill/guide**	

APPENDIX:

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

Note:

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

	Ministry of Higher Education and Scientific Research - Iraq AL-Mansour University College Computer Science Department	

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information
معلومات المادة الدراسية

Module Title	**LOGIC DESIGN**	**Module Delivery**	
Module Type	CORE	**Theory** **Lecture** **Lab** **Tutorial** **Practical** **Seminar**	
Module Code	LODE123		
ECTS Credits	6		
SWL (hr/sem)	150		
Module Level	1	**Semester of Delivery**	2
Administering Department	Type Dept. Code	**College**	Type College Code
Module Leader	Lec:Nada Abdul kareem	**e-mail**	nada.abdulkarim@muc.edu.iq
Module Leader's Acad. Title	Lecturer	**Module Leader's Qualification**	Msc
Module Tutor	None	**e-mail**	None
Peer Reviewer Name		**e-mail**	
Review Committee Approval	01/06/2023	**Version Number**	1.0

Relation With Other Modules
العلاقة مع المواد الدراسية الاخرى

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الارشادية	
Module Aims أهداف المادة الدراسية	1. To introduce students to the fundamental concepts and principles of logic design. 2. To develop students' skills in designing and analyzing digital logic circuits. 3. To enable students to apply logic design techniques to solve practical engineering problems. 4. To enhance students' understanding of the relationship between logic design and computer architecture.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	By the end of this module, students should be able to: 1.Understand the basic principles of Boolean algebra and logic gates.2.Design, analyze, and optimize combinational logic circuits. 3.Design, analyze, and optimize sequential logic circuits. 4.Utilize programmable logic devices (PLDs) and field-programmable gate arrays (FPGAs) for logic design. 5.Apply simulation and verification techniques to validate the functionalityof logic circuits. 6.Understand the role of logic design in computer architecture and digital systems.
Indicative Contents المحتويات الارشادية	1.Introduction to Logic Design . Overview of digital systems and their components . Binary number systems and codes . Boolean algebra and logic operations 2.Logic Gates and Combinational Logic Circuits . Basic logic gates (AND, OR, NOT, etc.) and their truth tables . Simplification techniques (Boolean algebra, Karnaugh maps) . Combinational logic circuits (adders, multiplexers, decoders, etc.) . Timing analysis and hazards in combinational circuits 3.Sequential Logic Circuits . Flip-flops, latches, and registers . Analysis and design of sequential circuits (state machines) . Synchronous and asynchronous sequential circuits . Timing considerations and clocking methodologies 4.Programmable Logic Devices (PLDs) and FPGAs . Introduction to PLDs and FPGAs

	. Implementation of logic circuits using PLDs and FPGAs . Configuration programming and hardware description languages (HDLs) 5. Simulation and Verification . Simulation tools for logic design (e.g., VHDL, Verilog) . Functional and timing simulation . Verification techniques (testbenches, formal verification) 6. Logic Design and Computer Architecture . Relationship between logic design and computer architecture . Introduction to processor design and memory systems . Logic design considerations for high-performance systems
Learning and Teaching Strategies ستراتيجيات التعلم والتعليم	
Strategies	1. Conceptual Understanding: Focus on explaining fundamental concepts and principles of logic design, such as Boolean algebra, logic gates, and truthtables. 2. Visual Representations: Utilize diagrams and flowcharts to visually illustrate the structure and behavior of logic circuits. 3. Hands-on Activities: Provide opportunities for students to design and implement logic circuits using simulation software, breadboards, or hardware platforms. 4. Problem Solving: Assign problem-solving exercises and assignments that require students to analyze, design, and optimize logic circuits. 5. Real-World Applications: Relate logic design concepts to practical applications in computer processors, digital systems, and electronic devices. 6. Group Collaboration: Encourage collaborative learning through group projects and activities to foster teamwork and communication skills. 7. Simulation and Verification: Use logic simulation software or hardware description languages to simulate and verify logic circuits' functionality. 8. Error Analysis: Discuss common errors in logic design and guide students in identifying and rectifying mistakes in their designs. 9. Industry Practices: Introduce students to industry-standard design practices, tools, and methodologies used in logic design. 10. Assessment and Feedback: Regularly assess students' understanding through quizzes and provide constructive feedback to guide their learning and improvement.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	88	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	62	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4.4
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)	5, 10	LO #1, 2, 3,4,5 and 6
	Assignments	2	10% (10)	2, 12	LO #1, 2, 3,4,5 and 6
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	10% (10)	13	LO #1, 2, 3,4,5 and 6
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO #1, 2, 3,4,5 and 6
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	➢ Number system • Decimal. • Binary
Week 2	• Octal. • Hexadecimal
Week 3	➢ Addition and subtraction • binary • octal • Hexadecimal.
Week 4	➢ Logic gates.

Week 5	➢ Boolean algebra and simplification and demorgan's.
Week 6	➢ K-map.
Week 7	➢ Combinational universal NAND and NOR logic.
Week 8	➢ Half-adder ➢ full-adder
Week 9	➢ 4- bit parallel adder, and Subtract adder.
Week 10	➢ Decoder, encoder
Week 11	➢ multiplexer, and demultiplexer.
Week 12	➢ Sequential logic circuits and Flip-flop, SR, D, and JK flip-flop.
Week 13	➢ Shift register 3-bit and 4-bit.
Week 14	➢ Binary counter 3-bit and 4-bit.
Week 15	**Preparatory Week**
Week 16	**Final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: Logic gates.
Week 2	Lab 2: Boolean algebra and simplification and demorgan's
Week 3	Lab 3: K-map, Half-adder, full-adder
Week 4	Lab 4: 4-bit parallel adder, and Subtract adder
Week 5	Lab 5: Decoder, encoder, multiplexer, and demultiplexer
Week 6	Lab 6: Sequential logic circuits and Flip-flop, SR, D, and JK flip-flop
Week 7	Lab 7: Shift register 3-bit and 4-bit, Binary counter 3-bit and 4-bit.

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	**1.** Computer System Architecture M.Morris Mano	Yes
Recommended Texts		No

	2. Digital fundamentals by Floyd, 2009	
Websites	**3.** Fundamental of digital logic and Microcomputer design, fifth addition.	

APPENDIX:

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

Note:

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

	Ministry of Higher Education and Scientific Research - Iraq AL-Mansour University College Computer Science Department	

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	SOFTWARE DEVELOPMENT TECHNIQUES			**Module Delivery**	
Module Type	CORE			**Theory** **Lecture**	
Module Code	SODT124				
ECTS Credits	4				
SWL (hr/sem)	100				
Module Level	1		**Semester of Delivery**	2	
Administering Department	Type Dept. Code		**College**	Type College Code	
Module Leader	Assit.Lec:Ali obaid abdulla		**e-mail**	Ali.abdullah@muc.edu.iq	
Module Leader's Acad. Title	Assit. Lecturer		**Module Leader's Qualification**	Msc.	
Module Tutor	None		**e-mail**	None	
Peer Reviewer Name			**e-mail**		
Review Committee Approval			**Version Number**	1.0	

Relation With Other Modules العلاقة مع المواد الدراسية الاخرى			
Prerequisite module	None	**Semester**	

Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الارشادية

Module Aims أهداف المادة الدراسية	1. To understand the basics of programming techniques, and programming languages. 2. To understand the structure and operation of the computer. 3. To get an idea about the representation of numbers in the computer. 4. To recognize the expression syntaxes: prefix, infix, and postfix. 5. To understand the basics of software development. 6. To understand the basics of programming techniques. 7. This course deals with the basic concepts of software development.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Get an idea of programming language types. 2. Get an idea of the representation of numbers inside the computer. 3. Get an idea of the structure of the computer system. 4. Recognize between expression syntaxes. 5. Recognize how software is developed. 6. List the various terms associated with software development. 7. Discuss the various approaches of programming techniques.
Indicative Contents المحتويات الارشادية	Indicative content includes the following. Programming techniques, classification of programming techniques, programming language types and translators. Features of high level programming language, the structure and operation of computer system, hardware of computer system. Representation of numbers, arithmetic and logical operations, expression syntaxes. Software Development Life Cycle – requirement definition, design, building, testing, maintenance. Software Development Tools – editor, compiler, linker, pre-processor, debugger, profiler. Program design – pseudo code, test data. Top- down design – recursion. Structured programming vs. object oriented programming.

	Websites, web application, desktop application.

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	58	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	42	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3
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	5% (5)	5, 10	LO #1, 2,and 3
	Assignments	2	5% (5)	2, 12	LO #1, 2,and 3
Summative assessment	**Midterm Exam**	2 hr	20% (20)	7	LO #1, 2,and 3
	Final Exam	2hr	70% (70)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	What is Programming techniques, classification of programming techniques, programming language types and translators
Week 2	Features of high level programming language, the structure and operation of computer system, hardware of computer system.
Week 3	Representation of numbers, arithmetic and logical operations, expression syntaxes.
Week 4	what is Software , Understanding General Software Development, Software Development Life Cycle and Modularization
Week 5	The context of software development, Profilers
Week 6	Program planning and design
Week 7	Mid - exam
Week 8	Understanding the Program, Using Design Tools to Create a Model,
Week 9	Develop Test Data, Pseudo-code,
Week 10	Top-down design
Week 11	Understanding Object Oriented Programming,
Week 12	Understanding Web Applications, Structured programming vs. object oriented programming
Week 13	Website , web application, desktop application
Week 14	Understanding database
Week 15	**Preparatory Week**
Week 16	**Final Exam**

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

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Lectures of software development fundamentals. Prof. Dr. Yousra H. Ali. University of Technology. Department of Computer science.	No
Recommended Texts		
Websites		

APPENDIX:

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

Note:

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

	Ministry of Higher Education and Scientific Research - Iraq AL-Mansour University College Computer Science Department	

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	SOFTWARE ENGINEERING			**Module Delivery**	
Module Type	CORE			**-Theory Lecture** **-Lab** **-PracticalSeminar**	
Module Code	SOEN125				
ECTS Credits	5				
SWL (hr/sem)	125				
Module Level	1		**Semester of Delivery**	2	
Administering Department	Type Dept. Code		**College**	Type College Code	
Module Leader	Assit.Lec:Mustafa Muhanad m.salih		**e-mail**	Mustafa.muahanad@muc.edu.iq	
Module Leader's Acad. Title	Assit. Lecturer		**Module Leader's Qualification**	Msc.	
Module Tutor	None		**e-mail**	None	
Peer Reviewer Name			**e-mail**		
Review Committee Approval			**Version Number**	1.0	

Relation With Other Modules العلاقة مع المواد الدراسية الاخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

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

Module Aims أهداف المادة الدراسية	1. To understand the basics of software development. 2. To understand the characteristics of software. 3. To understand the concepts of software process model.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Get an idea of the structure of the software. 2. Recognize how software is developed. 3. List the various terms associated with software development. 4. Discuss the various software process model.
Indicative Contents المحتويات الارشادية	Introduction to SW engineering, Computer software, What is software engineering, The evolving role of software, Software characteristics, Software engineering principles, The Characteristic of software engineer, Software applications, Software systems, Software development, A crisis on the horizon, The attribute of good software, Software lifecycle, Software Engineering-A Layered technology, Software process models, The waterfall model, The prototype model , The RAD model, Evolutionary software process models, The incremental model, The spiral model, Component based development, Introduction to Software process and project metrics, Measures , Metrics and Indicators, Metrics in the process and project domains, Process metrics, Project metrics, Software measurement, size oriented metrics, function oriented metrics, computing function point, Software Quality Metrics, Defect removal efficiency ,Integration metrics with software process, Statistical process control, Metrics for small organization, Establishing a software metrics program.

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)	74	**Structured SWL (h/w)**	5

الحمل الدراسي المنتظم للطالب خلال الفصل		الحمل الدراسي المنتظم للطالب أسبوعيا	
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	51	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.6
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**	1	10% (10)	5	LO #1, 2,and 3
	Practical Seminar(Lab).	2	15% (15)	Continuous	LO #1, 2,and 3
Summative assessment	**Midterm Exam**	1 hr	15% (15)	14	LO #1, 2,and 3
	Final Exam	3hr	60% (60)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction to Software engineering, Computer software
Week 2	What is software engineering, the evolving role of software, software characteristics , software Engineering principles
Week 3	What is software engineering, the evolving role of software, software characteristics , software Engineering principles
Week 4	The characteristic of software engineer, software application, software systems ,software development, a crisis on the horizon
Week 5	The attribute of good software, software lifecycle
Week 6	Software engineering- layered technology, software process model, the waterfall model
Week 7	Mid - exam
Week 8	The prototype model l, evolutionary software process model
Week 9	The incremental model, the spiral model, the win spiral model

Week 10	Component-based development
Week 11	Introduction to software proces and project metrics, measures, metrics and indicators
Week 12	Metrics in the process and project domains, process metrics
Week 13	Project metrics, software measurement, size oriented metrics, function oriented metrics
Week 14	Computing function point, software quality metrics, defect removal efficiency, integration metrics with software process, Statistical process control, Metrics for small organization, Establishing a software metrics program,
Week 15	**Preparatory Week**
Week 16	**Final Exam**

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

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Lectures of software development fundamentals. Prof. Dr. Yousra H. Ali. University of Technology. Department of Computer science.	No
Recommended Texts		
Websites		

APPENDIX:

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

Note:
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First and Second Semester

Module 1

Module Information			
Module Title	Workshops		Module Delivery
Module Type	Support		☐ Theory ☐ Lecture ☐ Lab ☐ Tutorial ■ Practical ☐ Seminar
Module Code	WORSH11		
ECTS Credit/year	4		
SWL/year	100		
Module level	1	Semester of Delivery	1, 2
Module Leader	Training and Workshops Center	College	
Module Leader Academic Title		e-mail	
Module Tutor		Module Leader's Qualification	
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date		e-mail	
		Version Number	1

Relation with other Modules			
Prerequisite Module	-	Semester	-
Co-requisite Module	-	Semester	-

Module Aims, Learning Outcomes and Inductive Contents	
Module Aims	1-Preparing applied engineers in the field of engineering sciences who are distinguished by a high level of knowledge and technological creativity, in line with the strict standards adopted globally in quality assurance and academic accreditation of the corresponding engineering programs, while adhering to the ethics of the engineering profession. 2. Enable the student to know and understand work systems, risks, and the factors surrounding them. 3. Enable the student to know and understand theoretical principles in handicrafts and measurements.
Module Learning Outcomes	1- To familiarize the student with the vocabulary of occupational safety and its importance in the field of work. 2- Acquisition of the student's manual operation skills, for example (Filings and

	Tinsmith workshops), and mechanical operation skills, for example (Turning). 3- Acquisition of the student's mechanical forming skills, for example (Casting and Blacksmithing). 4- The student acquires basic engineering skills such as Welding, Carpentry, and Electrical installations that serve him in the professional field. 5- Enabling the student to operate the various machines and devices in mechanical operations and formation. 6- Cooperative learning by working collectively.
Inductive Contents	1. Introducing the student to the basics of the art of turning and milling, types of cold working machines, the skill of dealing with them, choosing metals, operational tools, and methods of measurement and standardization 2. Introducing the student to the basics of the art of casting, hot forming, metal selection, method of working on casting furnaces and tools, and manufacturing casting molds 3. Familiarize students with the basics of cars and the systems they use, as well as maintenance, disassembly, and assembly processes. 4. Introducing students to the basics of household and industrial electrical appliances, the skill of using tools, and designing electrical circuits and control panels 5. Introducing the student to the basics of the art of plumbing, leveling surfaces, the skill of using tools, manufacturing and installing geometric shapes, and methods of measurement and standardization 6. Introducing the student to the basics of the art of blacksmithing, cold and hot forming of metals, the method of hardening them, and the skills of dealing with hand tools, forming machines, and heating furnaces 7. Introducing the student to the basics of the art of filing and manual operation of metals with the help of manual, electrical, and mechanical tools, the skills of dealing with them, and the methods of measurement and standardization 8. Introducing the student to the basics of the art of welding, the installation and assembly of metals, the types of welding machines, the skills of dealing with them, the types of welding, and the methods of measurement and standardization 9. Introducing the student to the basics of the art of carpentry and woodworking with the help of manual, electrical, and mechanical tools, the skills of dealing with them, and methods of measurement and standardization

Learning and Teaching Strategies	
Strategies	

Student Workload (SWL)			
Structured SWL (h/sem)	46.5	Structured SWL (h/w)	3.00
Unstructured SWL (h/sem)	3.5	Unstructured SWL (h/w)	0.23
Total SWL (h/sem)	50		
Structured SWL (h/year)	93	Structured SWL (h/w)	3.00
Unstructured SWL (h/year)	7	Unstructured SWL (h/w)	0.23
Total SWL (h/year)	100		

Module Evaluation					
		Time/No.	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative Assessment	Quizzes				
	Assignments				All
	Projects / Practice	Every 3 weeks	60%	Continuous	
	Report				
Summative Assessment	Midterm Exam				
	Exam	Every 3 weeks	40%	Continuous	All
Total assessment			100%		

Delivery Plan (Weekly Syllabus)	
	Materials Covered
Week 1	Welding workshop. -Occupational safety and its importance in welding workshops. -Introduction to the basics of welding. -Electric arc exercise. -An exercise for welding straight lines in a circular motion (helical).
Week 2	Welding workshop - An exercise for welding straight lines with a crescent movement and other welding methods -Construction welding exercise.
Week 3	Welding workshop. -Welding two pieces together. -Written exam in practical exercises. -
Week 4	Casting workshop -Occupational safety and its importance in plumbing workshops.

	-Introduction to the basics of metal casting. -Simple wooden disc exercise. Half workout.
Week 5	Casting workshop Wheel exercise. Pushing arm exercise.
Week 6	Casting workshop. -Complete pulley exercise. -Circular pole exercise. -Written exam in practical exercises.
Week 7	Blacksmith Workshop -Occupational safety and its importance in blacksmithing workshops. -Introduction to the Basics of Blacksmithing. - Barbell adjustment exercise. -Eight-star exercise. - Exercise forming the number eight in English. -Six formation exercises in English.
Week 8	Blacksmith Workshop -An exercise forming the number five in English. - Exercise forming the number nine in English. -An exercise in forming an iron model in the form of a circle .
Week 9	Blacksmith Workshop - S-shape exercise. - Air hammer hot barbell exercise. - Exercise to form a circle on an electric bending machine. - Exercising cold and hot ornament formation. - A written exam in practical exercises .
Week 10	Automotive Workshop -Occupational safety and its importance in car maintenance workshops. -An introduction to cars and their basic parts. -Parts of the engine, how it works, types of engines, and methods of classification.
Week 11	Automotive Workshop - Open the engine and identify the parts -Lubrication system -Cooling system.
Week 12	Automotive Workshop -The fuel system. -The old and new ignition circuits. -Written exam in practical exercises.
Week 13	Turning Workshop -Introduction to lathe machines and identifying their parts -Measuring tools and the use of an oven measuring instrument

	-Circular column lathing exercise on different diameters.
Week 14	Turning Workshop -Exercise using the pen (semicircular R) brackets. An exercise in making different angles using a pen (square + angle pen 55).
Week 15	Turning Workshop - Making shaft with different diameter exercises using (left and right pen) - Workout (Tube Connection). -Written exam in practical exercises.
Week 16	Fitting workshop Occupational safety and its importance in filing workshops -An introduction to the basics of filing -Pen holder exercise “preparation and preparation”
Week 17	Fitting workshop Pencil holder exercises finishing and assembling.
Week 18	Fitting workshop -The catcher exercise. - Clamping exercise. Written exam in practical exercises.
Week 19	Carpentry workshop -Occupational safety and its importance in carpentry workshops. - An introduction to carpentry, its types, types of wood, tools used, and preparation Preparing the tools used Face modification exercise using the reindeer
Week 20	Carpentry workshop Garden fence work and how to connect its parts, the eight-star exercise
Week 21	Carpentry workshop - Wood smoothing exercise using smoothing paper - Wood dyeing exercise in three stages Final smoothing and varnishing exercise Written exam in practical exercises
Week 22	The tinsmith workshop Occupational safety and its importance in plumbing workshops An introduction to plumbing, its tools, and plumbing stages Planning and marking exercise on metal plates
Week 23	The tinsmith workshop Geometric shapes Types of individuals and methods of individuals Geometric shape individuals exercise on a metal board
Week 24	The tinsmith workshop Cone members exercise

	- Exercise of cylinders with an oblique cut Roll forming operations Connection without the use of an intermediary Written exam in practical exercises
Week 25	Electric Workshop Occupational Safety and its importance in electrical workshops An introduction to the basics of electrical installations - Linking a simple circuit consisting of a lamp to the control of a single-way switch. Connect two lamps in series with one-way switch control. Connecting two lamps in parallel with the control of a single road switch. Connect two lights with one-way dual switch control.
Week 26	electric Workshop Connect a fluorescent lamp circuit to a one-way switch control Connecting an electric supply socket circuit to the control of a separate or combined one-way switch Written exam in practical exercises
Week 27	electric Workshop Occupational Safety and its importance in blacksmithing workshops Introduction to the basics of Blacksmithing - Barbell adjustment exercise Eight-star exercise - Exercise forming the number eight in English Exercise forming the number six in English
Week 28	supplementary training curriculum Welding workshop Plumbing workshop Blacksmith's workshop
Week 29	supplementary training curriculum - Automotive workshop - Turning workshop Fitting workshop
Week 30	supplementary training curriculum Carpentry workshop The plumbing workshop electric Workshop

Learning and Teaching Resources		
	Text	Available in the library
Required Texts	Workshop technology and measurements, Ahmed Salem Al-Sabbagh,	yes

Recommended Texts		
Websites		