

نموذج وصف البرنامج الأكاديمي

اسم الجامعة : جامعة بابل
الكلية : كلية الهندسة
القسم العلمي : قسم الهندسة الكهربائية
اسم البرنامج الأكاديمي او المهني : بكالوريوس هندسة
اسم الشهادة النهائية : بكالوريوس في الهندسة الكهربائية
النظام الدراسي: ABET
تاريخ عداد الوصف: 7/4/2024
تاريخ ملء الملف: 1/4/2024

التوقيع :

اسم المعاون العلمي: أ.م.د. مكي حسين نقيب
التاريخ : 14/12/2024

التوقيع :

اسم رئيس القسم: أ.م.د. مكي حسين نقيب
التاريخ :



دقق الملف من قبل

شعبة ضمان الجودة والأداء الجامعي

اسم مدير شعبة ضمان الجودة والأداء الجامعي:

التاريخ

التوقيع

مصادقة السيد العميد

Ministry of Higher Education and Scientific Research
Scientific Supervision and Scientific Evaluation Apparatus
Directorate of Quality Assurance and Academic Accreditation
Accreditation Department



Academic Program and Course Description Guide

2024

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	Mathematics I	Module Delivery	
Module Type	Support	<input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input type="checkbox"/> Lab <input checked="" type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar	
Module Code	UOBAB 0103011		
ECTS Credits	5		
SWL (hr/sem)	125		
Module Level	1		
Administering Department	Electrical Engineering	College	Engineering
Module Leader	Ahmed Qasim Jumaah ALdhahab	e-mail	Ahmedalthahab82@uobabylon.edu.iq
Module Leader's Acad. Title	Assistant Prof.	Module Leader's Qualification	Ph.D.
Module Tutor	Ahmed Qasim Jumaah ALdhahab	e-mail	Ahmedalthahab82@uobabylon.edu.iq
Peer Reviewer Name	Sameer Abdul Kadhim Alrufaiat	e-mail	eng.samir.abdul@uobabylon.edu.iq
Scientific Committee Approval Date	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

1. Students are expected to learn how to deal with functions in terms of Solving Equations and Inequalities, Graphing and Functions, Polynomial Functions, Systems of Equations, etc.
2. The limit of the functions is very important for the student to know. By employing the limit to the function, student will be able to find the continuity/ discontinuity of the function, graph of the function, finding the derivative to the function, the function behavior when it reaches into both sides of infinity, etc.
3. The derivative is one of the key ideas in calculus and used to study a wide range of problems in mathematics, science, economics, and medicine. Simplifying the functions through applying derivative is very important for the students to know. Therefore, in derivative chapter, students will learn several things including, Derivative Formulas, Power Rule, Product Rule, Quotient Rule, Chain Rule, Higher Order Derivatives, Implicit Differentiation, Logarithmic Differentiation, Derivatives of Trig Functions, Exponential Functions, Logarithm Functions, Inverse Trig Functions, and Hyperbolic Trig Functions.
4. One of the most important applications of the derivative is using derivative as a tool to find the optimal (best) solutions to the problems. The derivative is used to find extreme values of functions, to determine and analyze the shapes of graphs, and to solve equations numerically. We also introduce the idea of recovering a function from its derivative. There are many of the derivative applications, such as the Mean Value Theorem, Related Rates, Critical Points, Minimum and Maximum Values, Increasing/Decreasing Functions, Inflection Points, Concavity, Optimization.
5. To calculate the areas and volumes of general shapes, the method called integration is used. The definite integral is the key tool in calculus for defining and calculating many important quantities, such as areas, volumes, lengths of curved paths, probabilities, averages, energy consumption, etc.
6. Furthermore, students are expected to learn how to find the area under a curve and the area between two curves, solids of revolution, etc.
7. Finally, students are expected to deal with the transcendental functions: Inverse Function and their Derivatives, Natural Logarithms, Exponential Functions, Inverse Trigonometric Functions, and Hyperbolic Functions.

1. Read different technical books and lecture notes.
2. Students should learn the principle of Mathematics I (Algebra and Calculus I)

<p>Module Learning Outcomes</p> <p>مخرجات التعلم للمادة الدراسية</p>	<ol style="list-style-type: none"> 3. Understand the rules and regulations for this type of course. 4. Solving and simplifying Equations and Functions 5. Understand the problem and turn it into real mathematical problem. 6. Students should be able to solve the equality and inequality of the equations successfully. 7. Students should be able to solve practical problems. 8. Students should be able to find the limits and then check whether the function is continuous or not. Then, student has to be able to see the behavior of the function when it reaches to infinity in both sides. 9. Students should be able to derive the function and finding Derivative Formulas, Higher Order Derivatives, Related Rates, Critical Points, Minimum and Maximum Values, Increasing/Decreasing Functions, Inflection Points, Concavity, Optimization, etc. 10. Students should be able to integrate the function and finding areas, volumes, lengths of curved paths, probabilities, averages, energy consumption, etc. 11. Students has to be able to deal with the inverse function and their derivative. Also, it has the ability to deal with the natural logarithms, exponential function, trigonometric functions, etc. 12. Students will learn to deal with the transcendental functions. 13. Students should be able to search for topics online and make reports.
<p>Indicative Contents</p> <p>المحتويات الإرشادية</p>	<p>Indicative content includes the following.</p> <p>Chapter 1: Brief review: Set, Relations, Intervals, Functions, Range, Domain, and Absolute value. Coordinates and Graphs in Plane, A Slope and An Equation of A Line, Trigonometric Functions (Identities, Domain, Range, etc.) [8 hrs]</p> <p>Chapter 2: Limits: Limit of a Functions, Limit Laws, Eliminating Zero Denominators Algebraically, and Sandwich Theorem. Approaching a Limit from One Side, Continuity and Discontinuity, Limits Involving Infinity, and Asymptote of a Graph. [8 hrs]</p>

	<p>Chapter 3: Differentiation: Definition, Slopes and Tangent Lines, Differentiation Rules, Derivatives of Trigonometric Functions, and Chain Rule. High Order Derivatives, Implicit Differentiation, Minima and Maxima , and Derivative as a Rate of Change. [12 hrs]</p> <p>Chapter 4: Applications of Derivatives: Extreme Values of Functions, The Mean Value Theorem, Monatomic Functions and the First Derivative Test. [6 hrs]</p> <p>Chapter 5: Integration: Definition, Properties, Integration of Trigonometric Functions, Finite Sum, and Sigma Notation. Definite Integral, Definite Integral Rules, and Fundamental Theorem of Integration. [12 hrs]</p> <p>Chapter 6: Applications of Integrations: Areas between Curves, and Volumes, Arc Length, and Surface Area of Revolution. [8 hrs]</p> <p>Chapter 7: Transcendental Functions: Inverse Function and their Derivatives, Natural Logarithms, Exponential Functions, Inverse Trigonometric Functions, and Hyperbolic Functions. [8 hrs]</p>
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Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	<p>In this module "Mathematics I", various learning and teaching strategies will be implemented to enhance students' understanding and engagement. Some common strategies are listed below:</p> <ul style="list-style-type: none"> ➤ Visualization: Visualization is a useful technique to process or summarize the knowledge that has been instructed in class. When students receive the information through visual means, they are more able to retain both the previous learning and new information for a longer time. Visualization is also a helpful learning process for lower-attaining learners to receive the information in a simpler, clear and systematic way. Thus, an effective teacher would use visual tools such as flow charts, graphic organizers, concept maps, etc.

- **Teamwork:** Dividing the class into groups to complete a task is a teaching strategy. It is recommended to encourage students of mixed abilities to work with one another. By doing so, those who have more knowledge of the subject can share their knowledge and help their peers understand the topic better.
- **Inquiry-Based Teaching:** Encouraging students to ask a lot of questions is an effective teaching strategy that does not only motivate students to think more practically but also helps them to become independent learners. **Inquiry-Based learning** motivates students to ask questions and work with one another to solve any problem.
- **Implementing Technology in the Classroom:** Using technology in the classroom is a valuable tool that prepares students to learn 21st-century skills. Use of PowerPoint presentations, videos, virtual classrooms, robots and augmented reality (AR) does not only add liveliness to the classroom but may also lead to a more inclusive and effective learning environment that improves inquisitiveness and collaboration between the students and allow educators to compile data on student performance.
- **Assessments and Feedback:** Integrating formative assessment strategies in the classroom. Regular assessments, such as quizzes, assignments, and exams, can be used to evaluate students' understanding and progress. Constructive feedback helps students identify areas for improvement and reinforces their learning.
- **Critical Thinking:** Advancing critical thinking skills, using graphic organizers to help students organize their thinking, is another way of learning strategies. Provide playful learning experiences that promote divergent thinking.
- **Personalized learning or Self-Learning:** Since students are not exactly alike, **personalized learning** builds a learning experience that addresses the *unique abilities of each student*.
- **Link mathematics to real-life problems:** A common thought that many math's students have is along the lines of "when is this theorem ever used in real life situations?". Whenever possible, use a relevant topical example where the theory taught was applied.

Implementing these learning and teaching strategies in the module of "Mathematics" will help students to understand the module very well and faster. Hence, employing these techniques in module of "Mathematics" will led to accomplish the aim of the module faster.

Student Workload (SWL)

الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعياً	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	62	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	4.13
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	5	25% (25)	3, 5, 8, 12	LO # 4, 6, 8, and 9
	Assignments	2	5% (5)	13, 14	LO # 9, 10, 11, and 12
	Projects / Lab.	NA	NA	NA	
	Report	1	10% (10)	15	LO # 4, 6, 8, 9, 10, 11, and 12
Summative assessment	Midterm Exam	2 hr	10% (10)	8 or 9	LO # 4, 6, 8, and 9
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Brief review: Set, Relations, Intervals, Functions, Range, Domain, and Absolute value.
Week 2	Brief review: Coordinates and Graphs in Plane, A Slope and An Equation of A Line, Trigonometric Functions (Identities, Domain, Range, etc.)
Week 3	Limits: Limit of a Functions, Limit Laws, Eliminating Zero Denominators Algebraically, and Sandwich Theorem.
Week 4	Limits: Approaching a Limit from One Side, Continuity and Discontinuity, Limits Involving Infinity, and Asymptote of a Graph.

Week 5	Differentiation: Definition, Slopes and Tangent Lines, Differentiation Rules, Derivatives of Trigonometric Functions, and Chain Rule.
Week 6	Differentiation: High Order Derivatives and Implicit Differentiation
Week 7	Differentiation: Minima and Maxima , and Derivative as a Rate of Change. Applications of Derivatives: Extreme Values of Functions.
Week 8	Mid Term Exam. Applications of Derivatives: The Mean Value Theorem, and Monatomic Functions and the First and second Derivative Test.
Week 9	Integration: Definition, Properties, Integration of Trigonometric Functions, Finite Sum, and Sigma Notation.
Week 10	Integration: Definite of indefinite Integral. Indefinite Integral Rules and their properties.
Week 11	Integration: Definite Integral, Definite Integral Rules, and Fundamental Theorem of Integration
Week 12	Applications of Integrations: Areas between Curves, and Volumes.
Week 13	Applications of Integrations: Arc Length, and Surface Area of Revolution.
Week 14	Transcendental Functions: Inverse Function and their Derivatives, Natural Logarithms, and Exponential Functions.
Week 15	Transcendental Functions: Inverse Trigonometric Functions, and Hyperbolic Functions.
Week 16	Preparatory week before the final Exam

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	<ol style="list-style-type: none"> Hass, Joel, Christopher Heil, Maurice D. Weir, and George B. Thomas, <i>Thomas' calculus</i>, Pearson, thirteen Edition. Courant, Richard, and Fritz John, <i>Introduction to calculus and analysis I</i>, Springer Science & Business Media, 2012. 	Yes
Recommended Texts	<ol style="list-style-type: none"> Stewart, James, Daniel K. Clegg, and Saleem Watson, <i>Calculus: early transcendentals</i>, Cengage Learning, 2020. Jerrold Marsden and Alan Weinstein, <i>Calculus I</i>, Second Edition, Springer-Verlag New York Berlin Heidelberg 	Yes

Websites	https://tutorial.math.lamar.edu/	
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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
<p>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.</p>				

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	Basics of Electrical Engineering I		Module Delivery
Module Type	Core		<input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input checked="" type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	UOBAB 0103012		
ECTS Credits	5		
SWL (hr/sem)	125		
Module Level	1	Semester of Delivery	
Administering Department	Electrical Engineering	College	College of Engineering
Module Leader	Dr. Saad Saffah Hreshee	e-mail	eng.saad.saffah@uobabylon.edu.iq
Module Leader's Acad. Title	Professor	Module Leader's Qualification	Ph.D.
Module Tutor	Dr. Saad Saffah Hreshee	e-mail	eng.saad.saffah@uobabylon.edu.iq
Peer Reviewer Name	Dr. Hassen Jassim	e-mail	hassan.jasim@uobabylon.edu.iq
Scientific Committee Approval Date	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

<p>Module Aims</p> <p>أهداف المادة الدراسية</p>	<p>The module "Basics of Electrical Engineering" aims to provide students with a fundamental understanding of the principles, concepts, and applications of electrical engineering. The specific aims of this module are the following objectives are targeted:</p> <ol style="list-style-type: none">1. Introduction to Electrical Engineering: The module aims to introduce students to the field of electrical engineering, its historical background, and its significance in various technological applications.2. Circuit Analysis: Students are taught the fundamentals of circuit analysis, including Ohm's Law, Kirchhoff's Laws, network theorems (such as Thevenin's and Norton's theorem), and techniques for solving simple and complex circuits.3. DC Circuits: The module aims to provide an understanding of direct current (DC) circuits, including the behavior of passive circuit elements like resistors. Students will learn how to analyze and solve circuits involving DC sources.4. Electric Power Systems: The module covers the basics of electric power systems.5. Basic Electrical Measurements: Students will be introduced to different electrical measurement techniques and instruments, including voltmeters, ammeters, oscilloscopes, and multimeters. They will learn how to make accurate measurements of voltage, current, and resistance in electrical circuits.6. Basic Electrical Measurements: Students will be introduced to different electrical measurement techniques and instruments, including voltmeters, ammeters, oscilloscopes, and multimeters. They will learn how to make accurate measurements of voltage, current, and resistance in electrical circuits.7. Problem-Solving Skills: Through practical examples, assignments, and laboratory work, the module aims to develop students' problem-solving skills in electrical engineering. They will learn how to apply theoretical concepts to solve real-world electrical engineering problems. <p>Overall, the module "Basics of Electrical Engineering" aims to provide students with a solid foundation in electrical engineering principles, preparing them for more advanced topics and practical applications in the field.</p>
<p>Module Learning Outcomes</p> <p>مخرجات التعلم للمادة الدراسية</p>	<p>Upon completion of the module "Basics of Electrical Engineering," students are expected to achieve the following learning outcomes:</p> <ol style="list-style-type: none">1. Understanding of Electrical Principles: Students should demonstrate a solid understanding of the fundamental principles and concepts of electrical engineering, including Ohm's Law, Kirchhoff's Laws, network theorems, and basic circuit analysis techniques.2. Competence in Circuit Analysis: Students should be able to analyze and solve simple and complex electrical circuits using appropriate techniques and tools. They should be able to calculate voltages, currents, and power dissipation in circuits accurately.

	<ol style="list-style-type: none"> 3. Ability to Make Electrical Measurements: Students should be able to use electrical measurement instruments, such as voltmeters, ammeters, and oscilloscopes, to make accurate measurements of voltage, current, and resistance in electrical circuits. They should understand measurement techniques and be capable of interpreting measurement results. 4. Awareness of Safety and Standards: Students should be aware of electrical safety practices and understand the importance of following safety guidelines in electrical engineering. 5. Problem-Solving Skills: Students should demonstrate the ability to apply their knowledge of electrical engineering principles to solve practical problems. They should be able to identify and analyze electrical engineering problems, develop appropriate solution strategies, and effectively communicate their solutions. 6. Critical Thinking and Analytical Skills: Students should develop critical thinking and analytical skills through the module, enabling them to evaluate and interpret electrical engineering concepts, principles, and data. They should be able to think logically and make informed decisions in solving electrical engineering problems. 7. Teamwork and Communication: Students should have opportunities to work in teams and develop effective communication skills. They should be able to collaborate with others, share knowledge, and present their ideas and solutions clearly and concisely. <p>By achieving these learning outcomes, students will have a strong foundation in the basics of electrical engineering, enabling them to pursue further studies in the field or apply their knowledge in various engineering disciplines and industries.</p>
<p style="text-align: center;">Indicative Contents المحتويات الإرشادية</p>	<p>Part A - DC Circuit Theory Basic concepts and units, basic DC circuits Laws, [12 hrs]. Current and voltage definitions, Current and voltage sources, [12 hrs]. dependent and non-dependent Current and voltage sources [12 hrs]. Passive circuit elements, Combining resistive elements in series and parallel, [12 hrs]. Ohm's law, [11 hrs].</p> <p>Part B – DC Circuit Analysis Kirchhoff's laws, [11 hrs]. Mesh and Nodal analysis, [11 hrs]. Superposition theorem, Source transformation, [11 hrs]. Thevenin and Norton analysis Methods, [11 hrs]. Maximum power transfer, [11 hrs]. Millman's theorem, reciprocity theorem, [11 hrs].</p>

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies

The module "Basics of Electrical Engineering" can employ various learning and teaching strategies to enhance students' understanding and engagement. Here are some common strategies used in this module:

1. **Lectures:** Lectures are a primary teaching method in this module, where instructors deliver theoretical concepts, principles, and explanations. Lectures can include visual aids such as slides, diagrams, and animations to facilitate understanding. Instructors may also provide real-life examples and applications to make the content more relatable.
2. **Practical Examples and Problem-Solving:** Instructors can use practical examples and problem-solving exercises to help students apply theoretical concepts to real-world situations. By presenting and solving problems related to electrical circuits, students can develop critical thinking and analytical skills.
3. **Laboratory Work:** Laboratory sessions provide hands-on experience and reinforce theoretical concepts. Students can perform experiments and measurements using electrical components and instruments. This allows them to apply theoretical knowledge, gain practical skills, and understand the behavior of electrical systems in a controlled environment.
4. **Group Discussions and Collaborative Learning:** Group discussions and collaborative learning activities encourage students to engage actively in the learning process. Students can work together to solve problems, analyze case studies, or discuss challenging concepts. This promotes peer learning, critical thinking, and communication skills.
5. **Tutorials and Workshops:** Tutorials and workshops offer opportunities for students to seek additional help and clarification on specific topics. Instructors or teaching assistants can provide individual or small-group assistance, address students' questions, and guide them through problem-solving exercises.
6. **Multimedia and Interactive Tools:** Multimedia resources, such as videos, animations, and interactive simulations, can be used to enhance understanding and engage students. These resources can provide visual representations of abstract concepts and allow students to interact with the content, fostering active learning.
7. **Guest Lectures and Industry Visits:** Inviting guest speakers from industry or conducting visits to electrical engineering-related facilities can provide students with real-world perspectives and insights. Professionals can share their experiences, current trends, and practical applications, giving students a broader understanding of the field.

8. Assessments and Feedback: Regular assessments, such as quizzes, assignments, and exams, can be used to evaluate students' understanding and progress. Constructive feedback helps students identify areas for improvement and reinforces their learning. Feedback can be provided through written comments, discussions, or one-on-one consultations.
9. Online Resources and Platforms: Online resources, such as e-learning platforms, online forums, and educational websites, can support student learning outside the classroom. These resources can provide additional readings, practice exercises, and interactive modules to supplement classroom teaching.
10. Self-directed Learning: Encouraging students to take ownership of their learning through self-directed study is important. Students can explore additional resources, conduct independent research, and deepen their understanding of specific topics. This cultivates lifelong learning skills and promotes curiosity in the field of electrical engineering.

By combining these learning and teaching strategies, the module "Basics of Electrical Engineering" aims to create an interactive and engaging learning environment that caters to different learning styles, promotes critical thinking, and prepares students for further studies and professional practice in electrical engineering.

Student Workload (SWL)

الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعياً	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	62	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	4.133
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation

تقييم المادة الدراسية

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

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Basics of Network Elements
Week 2	Current and voltage sources, (dependent and non-dependent)
Week 3	Resistance and Resistivity, Combining resistive elements in series and parallel
Week 4	Ohm's Law
Week 5	Kirchhoff's Laws
Week 6	Circuit Analysis - Nodal and Mesh
Week 7	Circuit Analysis – Super Node and Super Mesh
Week 8	Mid-term Exam + Linearity and Superposition
Week 9	Linearity and Superposition
Week 10	Source Transformations
Week 11	Thévenin Equivalent circuits
Week 12	Norton Equivalent circuits
Week 13	maximum power transfer
Week 14	Millman's theorem
Week 15	reciprocity theorem
Week 16	Preparatory week before the final Exam

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Fundamentals of Electric Circuits, 4 th edition, C.K. Alexander and M.N.O Sadiku, McGraw-Hill Education	Yes
Recommended Texts	Introduction to Circuit Analysis, 10 th edition, Boylestad .	Yes
Websites		

Grading Scheme

مخطط الدرجات

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

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

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	Electronics Physics		Module Delivery
Module Type	Core		<input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	UOBAB 0103013		
ECTS Credits	4		
SWL (hr/sem)	100		
Module Level	1	Semester of Delivery	
Administering Department	Electrical Engineering	College	Engineering collage
Module Leader	Sameer Abdul Kadhim Alrufaiaat	e-mail	eng.samir.abdul@uobabylon.edu.iq
Module Leader's Acad. Title	Assistant Prof.	Module Leader's Qualification	MS.c
Module Tutor	Sameer Abdul Kadhim Alrufaiaat	e-mail	eng.samir.abdul@uobabylon.edu.iq
Peer Reviewer Name	Dr. Hassan Jasim	e-mail	hassan.jasim@uobabylon.edu.iq
Scientific Committee Approval Date	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

<p>Module Aims</p> <p>أهداف المادة الدراسية</p>	<p>The aims of this modules</p> <p>1- The module aims to equip students with basic principles of material and how its deal with energy to remove the ambiguity in understanding the complex work of electrical appliances which will physical in subsequent years</p> <p>2-It is the basic concepts and terminology for understanding semiconductors. Of particular importance are the concepts of energy band, the two kinds of electrical charge carriers called electrons and holes, and how the carrier concentrations can be controlled with the addition of dopants. Another group of valuable facts and tools is the Fermi distribution function and the concept of the Fermi level. The electron and hole concentrations are closely linked to the Fermi level.</p> <p>3-This module introduces several devices that are formed by joining two different materials together. PN junction and metal–semiconductor junction are analyzed in the forward-bias and reverse-bias conditions. Of particular importance are the concepts of the depletion region and minority carrier injection. Solar cells and light-emitting diode are presented in some detail because of their rising importance for renewable energy generation and for energy conservation through solid-state lighting, respectively.</p> <p>4-This module introduces the bi polar junction transistor (BJT) operation and then presents the theory of the bipolar transistor I-V characteristics, current gain, and output conductance. High-level injection and heavy doping induced band narrowing are introduced. Si ,Ge transistor, transit time, and cutoff voltage are explained. Several bipolar transistor models are introduced, i.e. , Ebers–Moll model, small-signal model, and charge control model. Each model has its own areas of applications</p>
<p>Module Learning Outcomes</p> <p>مخرجات التعلم للمادة الدراسية</p>	<p>On completion of this module students are expected to:</p> <ul style="list-style-type: none">• Understand and be able to apply physics and electronics concepts.• Possess skills relevant to physics and electronics, e.g. experimental design and experimental technique.• Be able to demonstrate skills in mathematical analysis and problem solving..• Be sufficiently prepared for undertaking the module Physics and Electronics II.• Students should be able to analysis electrical circuits successfully.• Students should be able to solve practical problems.• Students should be able to design electrical circuits and networks based on data given.

	<ul style="list-style-type: none"> Students should be able to search topics online and make reports.
Indicative Contents المحتويات الإرشادية	

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Type 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	63	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	37	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	20% (10)	5 , 10	LO # 3 and 4, 8 and 9
	Assignments	2	10% (10)	6 , 12	LO # 4 and 5, 10 and 11
	Projects / Lab.	0			
	Report	1	10% (10)	13	Continuous
	Midterm Exam	2 hr	10% (10)	8	LO # 1-7

Summative assessment	Final Exam	3hr	50% (50)	16 or 17	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Atomic Structure and Energy Levels
Week 2	Hydrogen Atom Model
Week 3	Photoelectric Effect
Week 4	De-Broglie Theory and Einstein's Photoelectric Equation
Week 5	Energy Bands Theory
Week 6	Energy Distribution of Electrons in Conductors
Week 7	Mid Term Examination + Electrical Conduction in Metals
Week 8	Intrinsic Semiconductor
Week 9	N and P-Types Semiconductor
Week 10	P-N Junction
Week 11	Forward and Reverse Biases Junction
Week 12	Capacitance of P-N Junction
Week 13	Diode Application
Week 14	Special Diodes and There Application
Week 15	Bipolar Junction Transistor
Week 16	Preparatory week before the 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	
Week 8	Mid-term Exam
Week 9	
Week 10	
Week 11	
Week 12	
Week 13	
Week 14	
Week 15	
Week 16	

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	1- Solid State Electronic Devices, Ben G. Streetman 2- Electronic Devices and Circuits, Millimans	Yes
Recommended Texts	1- Physics for Scientists and Engineers, Serway. 2- Semiconductor Physics & Devices, Donald A. Neamen	No
Websites		

Grading Scheme

مخطط الدرجات

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

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

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

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	Principles of Computers I	Module Delivery	
Module Type	Core	<input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input type="checkbox"/> Lab <input checked="" type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar	
Module Code	UOBAB 0103014		
ECTS Credits	2		
SWL (hr/sem)	100		
Module Level	1	Semester of Delivery	1
Administering Department	Electrical engineering	College	College of Engineering
Module Leader	Dr. Hanaa Mohsin Ali	e-mail	hanaa.ali@uobabylon.edu.iq
Module Leader's Acad. Title	assistant prof.	Module Leader's Qualification	Ph.D.
Module Tutor	Dr. Hanaa Mohsin Ali	e-mail	Hanaa.ali@uobabylon.edu.iq
Peer Reviewer Name	Dr. Hassen Jassim	e-mail	hassan.jasim@uobabylon.edu.iq
Scientific Committee Approval Date	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

<p>Module Aims</p> <p>أهداف المادة الدراسية</p>	<p>This course provides an in-depth analysis of the fundamental principles of computer science. The exposition of these principles is fully reinforced by many practical problems that illustrate the concepts discussed.</p> <ol style="list-style-type: none">1. Beginning with precise and quantitative information about computer science origin and development.2. Study the representation of data inside the computer system.3. Understand the concept of data processing.4. Study how the data transfer from outside to inside the computer system.5. Define and describe computer information theory.6. Define and describe the computer system and its parts.7. Describe and understand the differences among the number of computer operating systems.8. Clearly understand and studies (MS-DOS and Windows).9. Use Windows system and its applications.10. Apply Microsoft Office (Word, Excel and PowerPoint).11. Define Network and Internet (services and terminologies).12. Introduce a mini project about what they learned from the lectures they got.
<p>Module Learning Outcomes</p> <p>مخرجات التعلم للمادة الدراسية</p>	<p>Upon completion of the module " Principles of Computers I ", students are expected to achieve the following learning outcomes:</p> <ol style="list-style-type: none">1. Study the representation of data inside the computer system.2. Understand the concept of data processing.3. Study how the data transfer from outside to inside the computer system.4. Define and describe computer information theory.5. Define and describe the computer system and its parts.6. Describe and understand the differences among the number of computer operating systems.7. Understand the software applications (Ms. Word, ms. excel and PowerPoint)
<p>Indicative Contents</p> <p>المحتويات الإرشادية</p>	<p>Part 1: Beginning with precise and quantitative information about computer science origin and development. Study the representation of data inside the computer system. Understand the concept of data processing. Study how the</p>

	<p>data transfer from outside to inside the computer system. Define and describe computer information theory. Define and describe the computer system and its parts. Describe and understand the differences among the number of computer operating systems. Clearly understand and studies (MS-DOS and Windows). Use Windows system and its applications. Understand the software applications (Ms. Word, ms. excel and PowerPoint. Define Network and Internet (services and terminologies). Introduce a mini project about what they learned from lectures they got [30 hrs].</p> <p>Part 2: Operating system – MS-DOS system (create a directory, change a directory and delete a directory). Operating System - Windows 2010 (log on, introduce desktop, change time and date, taskbar, notification area and change computer personnel). Operating System - Windows 2010 (create folder, copy folder, delete folder, change folder name, and start menu). Microsoft Office – MS Word (access MS-word, screen layout, cursor, using the keyboard in MS-word, create new doc., open doc., text, selecting text and formatting text) as well as for MS- excel and PowerPoint [30 hrs].</p>
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Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	<ol style="list-style-type: none"> 1. Learning Technologies on Campus using Whiteboard and TV monitor. 2. Hand out lecture notes. 3. Video lectures on YouTube and google classroom.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعياً	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	37	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	2.466
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	3	10% (10)	5, 7 and 15	LO # 1, 2 and 3
	Assignments	3	10% (10)	5, 7 and 15	LO # 1, 2 and 3
	Projects	3	15% (10)	Continuous	
	Report	1	5% (10)	14	Continuous
Summative assessment	Midterm Exam	2 hr	10% (10)	8	LO # 1-7
	Final Exam	3hr	50% (50)	16 or 17	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction to a computer system (definition, functionalities and types of computers)
Week 2	Basic parts of a computer system (hardware- CPU, input devices, output devices, memory and software-system, application)
Week 3	Operating system – MS-DOS system (log in, type commands, error-command, read directory and display directory contents)
Week 4	Operating system – MS-DOS system (create a directory, change a directory and delete a directory)
Week 5	Operating System - Windows 2010 (log on, introduce desktop, change time and date, taskbar, notification area and change computer personalize)
Week 6	Operating System - Windows 2010 (create folder, copy folder, delete folder, change folder name, and start menu).
Week 7	Microsoft Office – MS Word (access MS-word, screen layout, cursor, using the keyboard in MS-word, create new doc., open doc., text, selecting text and formatting text)
Week 8	Mid-term Exam + Microsoft Office – MS Word (MS-office bottom, text alignment, copy and paste, save text and doc., and print)
Week 9	Microsoft Office – MS Word (insert table, change table style, insert a text box, change style, insert the picture, insert shapes, insert a symbol, insert blank page and formatting page)

Week 10	Microsoft Office – MS Excel (Understand the use of spreadsheets and Excel, parts of the Excel window, Create and save a workbook file, Enter text, numbers, and dates into a worksheet)
Week 11	Microsoft Office – MS Excel (Insert, and remove columns and rows, insert formulas and functions, Insert, delete, move, and rename worksheets, Preview and print a workbook)
Week 12	Microsoft Office – MS-PowerPoint (Familiarize with the workspace, Name and save the presentation, add, rearrange, and delete slides, apply a new layout to a slide and Enter text on a slide)
Week 13	Microsoft Office – MS-PowerPoint (Adding Transition to the slides, using background (themes), Adding clip art, previewing your presentation, Print slides)
Week 14	Mini Project Presentation (Introduce mini project of PowerPoint + paper sheet containing some of the texts in Word)
Week 15	Introduction to the Internet (Define Network, define Internet, Internet services, Internet Terminology and searching the Web)
Week 16	A preparatory week before the Final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Operating system – MS-DOS system (log in, type commands, error-command, read directory and display directory contents)
Week 2	Operating system – MS-DOS system (create a directory, change a directory and delete a directory)
Week 3	Operating the computer, shut down, folder, file, menu, icons
Week 4	Windows, bars, tabs, Deskbar
Week 5	Operating System - Windows 2010, introduce desktop, change time and date, taskbar, notification area and change computer personnel.
Week 6	Operating System - Windows 2010 (create folder, copy folder, delete folder, change folder name, and start menu).
Week 7	Microsoft Office – MS Word (access MS-word, screen layout, cursor, using the keyboard in MS-word, create new doc., open doc., text, selecting text and formatting text)
Week 8	Mid-term Exam + Microsoft Office – MS Word (MS-office bottom, text alignment, copy and paste, save text and doc., and print)

Week 9	Microsoft Office – MS Word (insert table, change table style, insert a text box, change style, insert the picture, insert shapes, insert a symbol, insert blank page and formatting page)
Week 10	Microsoft Office – MS Excel (Understand the use of spreadsheets and Excel, parts of the Excel window, Create and save a workbook file, Enter text, numbers, and dates into a worksheet)
Week 11	Microsoft Office – MS Excel (Insert, and remove columns and rows, insert formulas and functions, Insert, delete, move, and rename worksheets, Preview and print a workbook)
Week 12	Microsoft Office – MS-PowerPoint (Familiarize with the workspace, Name and save the presentation, add, rearrange, and delete slides, apply a new layout to a slide and Enter text on a slide)
Week 13	Microsoft Office – MS-PowerPoint (Adding Transition to the slides, using background (themes), Adding clip art, previewing your presentation, Print slides)
Week 14	Mini Project Presentation (Introduce mini project of PowerPoint + paper sheet containing some of the texts in Word)
Week 15	Introduction to the Internet (Define Network, define Internet, Internet services, Internet Terminology and searching the Web)
Week 16	Introduction to a computer system (definition, functionalities and types of computers)

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	1. Principles of Computer Science by Salem Press, 2016 2. Great Principles of Computing by Peter J. Denning	no
Recommended Texts	1. Elements of Information Theory, T. M. Cover and J. A. Thomas JOHN WILEY & SONS, INC., 1991.	no
Websites	https://edu.gcfglobal.org/en/computerbasics/understanding-operating-systems/1/	

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 is required but credit awarded
	F - Fail	راسب	(0-44)	A considerable amount of work required

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

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	Electrical Engineering Laboratories I	Module Delivery	
Module Type	Related Learning Activity	<input type="checkbox"/> Theory <input type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input checked="" type="checkbox"/> Tutorial <input checked="" type="checkbox"/> Practical <input type="checkbox"/> Seminar	
Module Code	UOBAB 0103016		
ECTS Credits	3		
SWL (hr/sem)	75		
Module Level	1		
Administering Department	Electrical Engineering	College	College of Engineering
Module Leader	Dr. Saad Saffah Hreshee	e-mail	eng.saad.saffah@uobabylon.edu.iq
Module Leader's Acad. Title	Professor	Module Leader's Qualification	Ph.D.
Module Tutor	Intisar Hamid	e-mail	eng.intisar.hamid@uobabylon.edu.iq
Peer Reviewer Name	Dr. Hilal Abdul-Hussain Abbood	e-mail	eng.hilala.abbood@uobabylon.edu.iq
Scientific Committee Approval Date	01/06/2023	Version Number	1.0

Relation with other Modules

العلاقة مع المواد الدراسية الأخرى

Prerequisite module	None	Semester	
Co-requisites module	Basics of Electrical Engineering I (UOBAB0103012)	Semester	1

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Aims أهداف المادة الدراسية	<p>The module "Electrical Engineering Laboratories I" aims to provide students with a fundamental understanding of the principles, concepts, and applications of electrical engineering. The specific aims of this module are the following objectives are targeted:</p> <ol style="list-style-type: none">8. Basic Electrical Measurements: Students will be introduced to different electrical measurement techniques and instruments, including voltmeters, ammeters, oscilloscopes, and multimeters. They will learn how to make accurate measurements of voltage, current, and resistance in electrical circuits.9. Basic Electrical Measurements: Students will be introduced to different electrical measurement techniques and instruments, including voltmeters, ammeters, oscilloscopes, and multimeters. They will learn how to make accurate measurements of voltage, current, and resistance in electrical circuits.10. Problem-Solving Skills: Through practical examples, assignments, and laboratory work, the module aims to develop students' problem-solving skills in electrical engineering. They will learn how to apply theoretical concepts to solve real-world electrical engineering problems. <p>Overall, the module "Electrical Engineering Laboratories I" aims to provide students with a solid foundation in electrical engineering applications, preparing them for more advanced topics and practical applications in the field.</p>
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	<p>Upon completion of the module "Basics of Electrical Engineering," students are expected to achieve the following learning outcomes:</p> <ol style="list-style-type: none">8. Understanding of Electrical Principles: Students should demonstrate a solid understanding of the fundamental principles and concepts of electrical engineering, including Ohm's Law, Kirchhoff's Laws, network theorems, and basic circuit analysis techniques by applying it practically.9. Ability to Make Electrical Measurements: Students should be able to use electrical measurement instruments, such as voltmeters, ammeters, and oscilloscopes, to make accurate measurements of voltage, current, and resistance in electrical circuits. They should understand measurement techniques and be capable of interpreting measurement results.

	<p>10. Awareness of Safety and Standards: Students should be aware of electrical safety practices and understand the importance of following safety guidelines in electrical engineering.</p> <p>11. Problem-Solving Skills: Students should demonstrate the ability to apply their knowledge of electrical engineering principles to solve practical problems. They should be able to identify and analyze electrical engineering problems, develop appropriate solution strategies, and effectively communicate their solutions.</p> <p>12. Teamwork and Communication: Students should have opportunities to work in teams and develop effective communication skills. They should be able to collaborate with others, share knowledge, and present their ideas and solutions clearly and concisely.</p> <p>By achieving these learning outcomes, students will have a strong foundation in the basics of electrical engineering, enabling them to pursue further studies in the field or apply their knowledge in various engineering disciplines and industries.</p>
<p>Indicative Contents المحتويات الإرشادية</p>	<p>Part A - DC Circuit Theory Basic concepts and units, basic DC circuits Laws, [7 hrs]. Current and voltage definitions, Current and voltage sources, [7 hrs]. dependent and non-dependent Current and voltage sources [7 hrs]. Passive circuit elements, Combining resistive elements in series and parallel, [7 hrs]. Ohm's law, [5 hrs].</p> <p>Part B – DC Circuit Analysis Kirchhoff's laws, [7 hrs]. Mesh and Nodal analysis, [7 hrs]. Superposition theorem, Source transformation, [7 hrs]. Thevenin and Norton analysis Methods, [7 hrs]. Maximum power transfer, [7 hrs]. Millman's theorem, reciprocity theorem, [7 hrs].</p>

<p style="text-align: center;">Learning and Teaching Strategies استراتيجيات التعلم والتعليم</p>	
<p>Strategies</p>	<p>The module "Basics of Electrical Engineering" can employ various learning and teaching strategies to enhance students' understanding and engagement. Here are some common strategies used in this module:</p> <p>11. Practical Examples and Problem-Solving: Instructors can use practical examples and problem-solving exercises to help students apply theoretical concepts to real-world</p>

situations. By presenting and solving problems related to electrical circuits, students can develop critical thinking and analytical skills.

12. **Laboratory Work:** Laboratory sessions provide hands-on experience and reinforce theoretical concepts. Students can perform experiments and measurements using electrical components and instruments. This allows them to apply theoretical knowledge, gain practical skills, and understand the behavior of electrical systems in a controlled environment.
13. **Group Discussions and Collaborative Learning:** Group discussions and collaborative learning activities encourage students to engage actively in the learning process. Students can work together to solve problems, analyze case studies, or discuss challenging concepts. This promotes peer learning, critical thinking, and communication skills.
14. **Tutorials and Workshops:** Tutorials and workshops offer opportunities for students to seek additional help and clarification on specific topics. Instructors or teaching assistants can provide individual or small-group assistance, address students' questions, and guide them through problem-solving exercises.
15. **Multimedia and Interactive Tools:** Multimedia resources, such as videos, animations, and interactive simulations, can be used to enhance understanding and engage students. These resources can provide visual representations of abstract concepts and allow students to interact with the content, fostering active learning.
16. **Guest Lectures and Industry Visits:** Inviting guest speakers from industry or conducting visits to electrical engineering-related facilities can provide students with real-world perspectives and insights. Professionals can share their experiences, current trends, and practical applications, giving students a broader understanding of the field.
17. **Assessments and Feedback:** Regular assessments, such as quizzes, assignments, and exams, can be used to evaluate students' understanding and progress. Constructive feedback helps students identify areas for improvement and reinforces their learning. Feedback can be provided through written comments, discussions, or one-on-one consultations.
18. **Online Resources and Platforms:** Online resources, such as e-learning platforms, online forums, and educational websites, can support student learning outside the classroom. These resources can provide additional readings, practice exercises, and interactive modules to supplement classroom teaching.
19. **Self-directed Learning:** Encouraging students to take ownership of their learning through self-directed study is important. Students can explore additional resources, conduct independent research, and deepen their understanding of specific topics. This

	<p>cultivates lifelong learning skills and promotes curiosity in the field of electrical engineering.</p> <p>By combining these learning and teaching strategies, the module "Basics of Electrical Engineering" aims to create an interactive and engaging learning environment that caters to different learning styles, promotes critical thinking, and prepares students for further studies and professional practice in electrical engineering.</p>
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Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	47	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعياً	3
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	28	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	1.867
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	75		

Module Evaluation تقييم المادة الدراسية					
As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	5	20% (10)	3, 6, 9, 12, 15	LO # 1,2,4,5,7,8,10,11, 13 and 14
	Report	15	20% (10)	Continuous	
Summative assessment	Midterm Exam	2 hr	10% (10)	8	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Lab. Syllabus) المنهاج الأسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: Understanding the operation of measurement devices

Week 2	Lab 2: Electrical Circuit Measurements
Week 3	Lab 3: Resistor Code
Week 4	Lab 4: Ohm's Law
Week 5	Lab 5: Kirchhoff's Laws
Week 6	Lab 6: Nodal Analysis
Week 7	Lab 7: Mesh Analysis
Week 8	Mid-term Exam
Week 9	Lab 8: Superposition Theorem
Week 10	Lab 9: Thevenin's Theorem
Week 11	Lab 10: Max. Power Transfer
Week 12	Lab 11: Millman's Theorem
Week 13	Lab 12: Substitution Theorem
Week 14	Lab 13: Reciprocity Theorem
Week 15	Lab 14: Compensation Theorem
Week 16	Preparatory week before the final Exam

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Fundamentals of Electric Circuits, 4 th edition, C.K. Alexander and M.N.O Sadiku, McGraw-Hill Education	Yes
Recommended Texts	Introduction to Circuit Analysis, 10 th edition, Boylestad .	Yes
Websites		

Grading Scheme

مخطط الدرجات

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Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
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	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
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	F – Fail	راسب	(0-44)	Considerable amount of work required

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

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	English Language I		Module Delivery
Module Type	Basic		<input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input type="checkbox"/> Lab <input checked="" type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input checked="" type="checkbox"/> Seminar
Module Code	UOBAB 0103016		
ECTS Credits	4		
SWL (hr/sem)	100		
Module Level	1	Semester of Delivery	
Administering Department	Electrical engineering	College	College of Engineering
Module Leader	Dr. Sarmad Khaleel Ibrahim	e-mail	Sarmad.ibrahim@uobabylon.edu.iq
Module Leader's Acad. Title	Asst. Professor	Module Leader's Qualification	Ph.D.
Module Tutor	Dr. Hanaa Mohsin Ali	e-mail	Hanaa.ali@uobabylon.edu.iq
Peer Reviewer Name	Dr. Hassen Jassim	e-mail	hassan.jasim@uobabylon.edu.iq
Scientific Committee Approval Date	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

<p>Module Aims</p> <p>أهداف المادة الدراسية</p>	<p>The main objectives of the course are:</p> <ol style="list-style-type: none">1. Pronunciation and Phonetics:<ul style="list-style-type: none">Learn the pronunciation of English sounds, including vowels, and consonants.2. Reading Comprehension:<ul style="list-style-type: none">Improve reading skills to identify the main idea of a text.Enhance scanning techniques to locate specific information in a text.Develop inference skills to understand implied meanings and draw conclusions.3. Writing Skills:<ul style="list-style-type: none">Develop writing skills for different purposes and audiences, including essays, reports, and letters.Practice organizing ideas logically and coherently in written form.Enhance grammar and vocabulary usage for effective written communication.4. Listening Comprehension:<ul style="list-style-type: none">Enhance listening skills to understand spoken English in various contexts.Practice listening for specific information and understanding implicit messages.5. Speaking Skills:<ul style="list-style-type: none">Develop oral communication skills for general, social, and professional purposes.Practice effective verbal communication strategies, such as turn-taking and maintaining a conversation.Enhance fluency, accuracy, and pronunciation in spoken English.6. Vocabulary and Grammar:<ul style="list-style-type: none">Expand vocabulary range through the study of word families, collocations, and idiomatic expressions.Enhance understanding and application of English grammar rules and structures.Practice using appropriate vocabulary and grammar in speaking and writing tasks.
<p>Module Learning Outcomes</p> <p>مخرجات التعلم للمادة الدراسية</p>	<p>A student who has successfully completed this course should be able to:</p> <ol style="list-style-type: none">1. Grammar and Language Use:<ul style="list-style-type: none">Demonstrate proficiency in producing and reviewing grammatical forms of English.Apply the learned grammar rules and structures appropriately in various communicative contexts.Use grammar accurately in class activities, homework assignments, reading texts, and writing tasks.2. Reading Comprehension:

	<ul style="list-style-type: none"> • Read and comprehend university-level texts with improved understanding. • Expand their vocabulary through reading and engage with complex academic texts. • Apply reading strategies to extract information, infer meaning, and analyze content. <p>3. Speaking Skills:</p> <ul style="list-style-type: none"> • Demonstrate improved speaking ability in terms of fluency and comprehensibility. • Engage in effective communication using appropriate vocabulary, grammar, and pronunciation. • Express ideas, opinions, and arguments clearly and confidently in both formal and informal settings. <p>4. Writing Skills:</p> <ul style="list-style-type: none"> • Write a simple paragraph that includes a clear topic sentence, supporting details, and a concluding sentence. • Organize ideas coherently and logically in written assignments. • Apply appropriate vocabulary, grammar, and sentence structures to express ideas effectively. <p>5. Oral Presentations:</p> <ul style="list-style-type: none"> • Deliver an oral presentation in class using academic strategies. • Organize and structure the presentation with a clear introduction, body, and conclusion. • Employ appropriate verbal and non-verbal communication techniques to engage the audience.
<p>Indicative Contents المحتويات الإرشادية</p>	<p>Indicative content includes the following:</p> <ol style="list-style-type: none"> 1- Grammer Skills: Parts of speech and Text Book. 2- Reading Comprehension Skills: Articles and Text Book. 3- Writing Skills: Brainstorming and Text Book. 4- Listening Skills: Videos and Text Book. 5- Individual and group oral presentations.

<p>Learning and Teaching Strategies استراتيجيات التعلم والتعليم</p>	
<p>Strategies</p>	<ol style="list-style-type: none"> 1. Communicative Approach: Emphasize communication and interaction in English through activities such as role-plays, discussions, debates, and group work.

	<ol style="list-style-type: none"> 2. Task-Based Learning: Design activities and tasks that simulate real-life situations, allowing students to apply language skills to achieve specific goals. 3. Authentic Materials: Incorporate authentic materials such as newspaper articles, podcasts, videos, and excerpts from books to expose students to real-world language use. 4. Language Practice: Provide ample opportunities for students to practice speaking and writing in English. Encourage pair work, group discussions, and presentations to promote fluency and build confidence. 5. Error Correction and Feedback: Provide constructive feedback on students' language use, both oral and written, to help them improve their accuracy and fluency. 6. Vocabulary and Grammar Development: Integrate explicit vocabulary and grammar instruction into lessons. Use techniques like contextualization, word families, and collocations to help students grasp new vocabulary. Break down complex grammar structures and provide ample practice opportunities for reinforcement. 7. Technology Integration: Utilize technology tools and resources to enhance language learning. Incorporate online language-learning platforms, multimedia resources, language learning apps, and interactive websites to engage students and provide additional practice opportunities. 8. Cultural Awareness: Integrate cultural elements into the curriculum to enhance students' understanding of the target language's cultural context. This can include discussing cultural practices, traditions, and perspectives, and exploring literature, films, and music from English-speaking countries. 9. Assessment and Reflection: Implement a variety of assessment methods, including quizzes, exams, presentations, projects, and portfolios, to assess students' language proficiency.
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Student Workload (SWL)			
الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعياً	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	37	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	2.466
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	3	10% (10)	5, 9,13	LO # 1-4, 5-8, and 9-12
	Assignments	3	10% (10)	4,8, 12	LO # 1-3, 5-7 and 8-11
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	10% (10)	13	Continuous
Summative assessment	Midterm Exam	2 hr	10% (10)	8	LO # 1-7
	Final Exam	3hr	50% (50)	16 or 17	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introductions and Review of Syllabus.
Week 2	Grammar Skills: Parts of speech: Noun, Pronoun, Verb. Unit 1,2 and 3 in Text Book
Week 3	Grammar Skills: Parts of speech: Adjective, Preposition, Conjunction. Unit 4 and 5 in Text Book
Week 4	Reading Comprehension Skills: Articles. Unit 6,7 and 8 in Text Book
Week 5	Grammar Skills: Present and Past, Simple and Progressive (Continuous) and Units 9, 10 and 11 in Text Book.
Week 6	Writing Skills: Brainstorming, Freewriting, Editing and Revising and Unit 12, 13 and 14 in Text Book.
Week 7	Individual and group oral presentations
Week 8	Mid-term Exam
Week 9	Grammar Skills: Noun, Pronoun, Verb. Parts of speech: Adjective, Preposition, Conjunction Reading Comprehension, Unit 1 and 2 in Text Book

Week 10	Grammar Skills: Where and when?, Articles, Listening skills. Unit 3. Present and Past, Simple, and Progressive (Continuous). Verb patterns, future forms. Unit 4 and 5.
Week 11	Reading Comprehension and Grammar skills: What... like?, Comparatives and superlatives. Synonyms and antonyms, Directions, Present Perfect and past, for, since, Adverbs, Short answers—units 6 and 7.
Week 12	Grammar Skills: Have(got) to, should/must Reading Comprehension and Time Clause, Going out Reading Comprehension, grammar skill, future, first condition. Units 8 and 9.
Week 13	Grammar Skills: verb forms2. Used to, -ed/ - ing adjectives, second conditions, PASSIVE, reading comprehension, Work-life balance Individual and group oral presentations. Reading activities are done individually, in pairs, and in groups. Units 10, 11, and 12.
Week 14	Writing Skills: Brainstorming, Freewriting, Editing and Revising. Units 13 and 14 in Text Book.
Week 15	Individual and group oral presentations
Week 16	The preparatory week before the Final Exam

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	1- New Headway Plus (Beginner Student's Book) by John and Liz Soars 2- New Headway Plus (Pre-Intermediate Student's Book English course) by John and Liz Soars	yes
Recommended Texts	1- Fundamental of English Grammar by Betty S. Azar and Stacy A. Hagen 2- Fundamental of English Grammar, third edition by Betty Schramper Azar.	No
Websites	https://www.cambridgeenglish.org/learning-english https://writingmentor.com https://ed.ted.com	

Grading Scheme

مخطط الدرجات

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

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

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	Mathematics II		Module Delivery
Module Type	Support		<input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input type="checkbox"/> Lab <input checked="" type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	UOBAB 0103021		
ECTS Credits	5		
SWL (hr/sem)	125		
Module Level	1	Semester of Delivery	
Administering Department	ELEC	College	ENG
Module Leader	Ahmed Qasim Jumaah ALdhahab	e-mail	Ahmedalthahab82@uobabylon.edu.iq
Module Leader's Acad. Title	Assistant Prof.	Module Leader's Qualification	Ph.D.
Module Tutor	Ahmed Qasim Jumaah ALdhahab	e-mail	Ahmedalthahab82@uobabylon.edu.iq
Peer Reviewer Name	Sameer Abdul Kadhim Alrufaiaat	e-mail	eng.samir.abdul@uobabylon.edu.iq
Scientific Committee Approval Date	01/06/2023	Version Number	1.0

Relation with other Modules				
العلاقة مع المواد الدراسية الأخرى				
Prerequisite module	Mathematics I (UOBAB 0103011)		Semester	1
Co-requisites module	None		Semester	

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

<p>Module Aims أهداف المادة الدراسية</p>	<ol style="list-style-type: none">8. Students are expected to learn how to do the following: Integration by Parts, Integrals Involving Trig Functions, Trig Substitutions, Integration using Partial Fractions, Integrals Involving Roots, Integrals Involving Quadratics, Integration Strategy, Improper Integrals, Comparison Test for Improper Integrals, and Approximating Definite Integrals.9. Knowing different types of numbers are very important. One of the most important one is the complex number.10. Solving Equations and Inequalities - Linear Equations, Quadratic Equations, Completing the Square, Quadratic Formula, Applications of Linear and Quadratic Equations, etc.11. Students are expected to learn how to deal with matrices in terms of finding the equality of Matrices, arithmetic operations: addition, subtraction, Multiplication (scalar and multi-matrices), Cofactor, adjoint of a square matrix, Transpose of Matrices, special matrices, computing Inverse square matrices.12. Hyperbolic functions: Derivatives and Integration. Application for Hyperbolic functions in Sag Analysis, Evaluating the values of Inverse hyperbolic functions, Definition, identities, domain, range, Graphs.13. Students are expected to learn how to deal with the vectors in terms of vector notation, scalar and vector quantities, vectors in space, scalar product of two vectors, cross product of two vectors, angle between two vectors.14. Finally, students are expected to learn how to deal with the parametric Equations and Polar Coordinates - Parametric Equations & Curves, Calculus with Parametric Equations (Tangents, Areas, Arc Length and Surface Area), Polar Coordinates, Calculus with Polar Coordinates (Tangents, Areas, Arc Length and Surface Area).
	<ol style="list-style-type: none">14. Read different technical books and lecture notes.15. Students should learn the principle of Mathematics II (Algebra and Calculus II)16. Understand the rules and regulations for this type of course.17. Solving and simplifying Equations and Functions.18. Understand the problem and turn it into real mathematical problem.

<p>Module Learning Outcomes</p> <p>مخرجات التعلم للمادة الدراسية</p>	<p>19. Students should be able to solve practical problems.</p> <p>20. Students should be able to find the integral of the function by using different integration techniques.</p> <p>21. Students should be able to classify numbers and deal with real and complex numbers and apply all the arithmetic operations to all types of numbers.</p> <p>22. Student should be able to solve equations in different order.</p> <p>23. Students are expected to learn how to deal with matrices in terms of finding the equality of Matrices, arithmetic operations: addition, subtraction, Multiplication (scalar and multi-matrices), Cofactor, adjoint of a square matrix, Transpose of Matrices, special matrices, computing Inverse square matrices.</p> <p>24. Students are expected to deal with the hyperbolic functions. In this part, give the relationships between hyperbolic functions and some of the basic facts involving hyperbolic functions. The derivatives of each of the six hyperbolic functions are illustrated in this part.</p> <p>25. Students are expected to learn how to deal with the vectors in terms of vector notation, scalar and vector quantities, vectors in space, scalar product of two vectors, cross product of two vectors, angle between two vectors</p> <p>26. Students are expected to learn how to deal with the parametric Equations and Polar Coordinates - Parametric Equations & Curves, Calculus with Parametric Equations (Tangents, Areas, Arc Length and Surface Area), Polar Coordinates, Calculus with Polar Coordinates (Tangents, Areas, Arc Length and Surface Area).</p> <p>27. Students should be able to search for topics online and make reports.</p>
<p>Indicative Contents</p> <p>المحتويات الإرشادية</p>	<p>Indicative content includes the following.</p> <p>Chapter 1: Methods of Integration: Integration by Part, finite integration by part, Trigonometric Substitution, Partial fraction factorization, Integration of rational Partial fractions, completing a square method, improper integrals, applications of proper and improper integrals in electrical circuits, applications of integrals on area calculation using integration methods. [16 hrs]</p> <p>Chapter 2: Complex Numbers: Definition, properties, and arithmetic operations, evaluation in polar form (modules and argument), applications of complex numbers in electrical circuits: calculation of complex current, voltages and power. determinants,</p>

	<p>determinants notation, determinants of second and third order, properties of determinants. [8 hrs]</p> <p>Chapter 3: Solving Equations: Definition Simultaneous equations in three unknowns using determinants, consistency test of a set of equations. [6 hrs]</p> <p>Chapter 4: Matrices: notations, equality of Matrices, arithmetic operations: addition, subtraction, Multiplication (scalar and multi-matrices), Properties of matrices, Cofactor, adjoint of a square matrix, Transpose of Matrices, special matrices, computing Inverse square matrices. [8 hrs]</p> <p>Chapter 5: Hyperbolic functions: Derivatives and Integration. Application for Hyperbolic functions in Sag Analysis. Inverse Hyperbolic Function: Evaluating the values of Inverse hyperbolic functions, Definition, identities, domain, range, Graphs. Inverse Hyperbolic Function: Derivatives, finite and infinite Integration, Application of Inverse hyperbolic functions in Electrical prospective. [8 hrs]</p> <p>Chapter 6: Vectors: vector notation, scalar and vector quantities, vectors in space, scalar product of two vectors, cross product of two vectors, angle between two vectors. [8 hrs]</p> <p>Chapter 7: Polar Coordinates: graphing polar coordinates, test of symmetry for polar graphs. Cardiographs, flower graphs with various number vertices, Equations relating polar and Cartesian coordinates, Calculation of length for a polar curve. [8 hrs]</p>
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Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	<p>In this module "Mathematics I", various learning and teaching strategies will be implemented to enhance students' understanding and engagement. Some common strategies are listed below:</p> <ul style="list-style-type: none"> ➤ Visualization: Visualization is a useful technique to process or summarize the knowledge that has been instructed in class. When students receive the information

through **visual means**, they are more able to retain both the previous learning and new information for a longer time. **Visualization** is also a helpful learning process for lower-attaining learners to receive the information in a simpler, clear and systematic way. Thus, an effective teacher would use visual tools such as flow charts, graphic organizers, concept maps, etc.

- **Teamwork:** Dividing the class into groups to complete a task is a teaching strategy. It is recommended to encourage students of mixed abilities to work with one another. By doing so, those who have more knowledge of the subject can share their knowledge and help their peers understand the topic better.
- **Inquiry-Based Teaching:** Encouraging students to ask a lot of questions is an effective teaching strategy that does not only motivate students to think more practically but also helps them to become independent learners. **Inquiry-Based learning** motivates students to ask questions and work with one another to solve any problem.
- **Implementing Technology in the Classroom:** Using technology in the classroom is a valuable tool that prepares students to learn 21st-century skills. Use of PowerPoint presentations, videos, virtual classrooms, robots and augmented reality (AR) does not only add liveliness to the classroom but may also lead to a more inclusive and effective learning environment that improves inquisitiveness and collaboration between the students and allow educators to compile data on student performance.
- **Assessments and Feedback:** Integrating formative assessment strategies in the classroom. Regular assessments, such as quizzes, assignments, and exams, can be used to evaluate students' understanding and progress. Constructive feedback helps students identify areas for improvement and reinforces their learning.
- **Critical Thinking:** Advancing critical thinking skills, using graphic organizers to help students organize their thinking, is another way of learning strategies. Provide playful learning experiences that promote divergent thinking.
- **Personalized learning or Self-Learning:** Since students are not exactly alike, **personalized learning** builds a learning experience that addresses the *unique abilities of each student*.
- **Link mathematics to real-life problems:** A common thought that many math's students have is along the lines of "when is this theorem ever used in real life situations?". Whenever possible, use a relevant topical example where the theory taught was applied.

Implementing these learning and teaching strategies in the module of "Mathematics" will help students to understand the module very well and faster. Hence, employing these techniques in module of "Mathematics" will led to accomplish the aim of the module faster.

Student Workload (SWL)

الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	62	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	4.13
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation

تقييم المادة الدراسية

		Time/ Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	5	25% (25)	3, 5, 8, 12	LO # 7, 8, 10, and 12
	Assignments	2	5% (5)	13, 14	LO # 7 and 8, 10 and 11
	Projects / Lab.	NA	NA	NA	
	Report	1	10% (10)	15	LO # 7, 8, 9, 10, 11, 12, and 13
Summative assessment	Midterm Exam	2 hr	10% (10)	8 or 9	LO # 7, 8, 9, and 10
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Brief review: Basic trigonometric function integration, Application of Integration.
Week 2	Methods of Integration: Integration by Part, finite integration by part, Trigonometric Substitution.
Week 3	Methods of Integrations: Partial fraction factorization, Integration of rational Partial fractions, completing a square method.
Week 4	Methods of Integrations: Improper integrals, Applications of proper and improper integrals in Electrical circuits, applications of integrals on area calculation using integration methods.
Week 5	Complex Numbers: Definition, Properties, and Arithmetic Operations.
Week 6	Complex numbers: Evaluation in polar form (modules and argument), applications of Complex numbers in Electrical circuits: calculation of Complex current, voltages and power. Determinants, determinants notation, determinants of second and third order, properties of determinants.
Week 7	Solving Equations: Simultaneous equations in three unknowns using determinants, consistency test of a set of equations.
Week 8	Matrices: notations, equality of Matrices, arithmetic operations: addition, subtraction, Multiplication (scalar and multi-matrices).
Week 9	Mid Term Exam. Properties of matrices, Cofactor, adjoint of a square matrix, Transpose of Matrices, special matrices, computing Inverse square matrices.
Week 10	Hyperbolic functions: Derivatives and Integration. Application for Hyperbolic functions in Sag Analysis.
Week 11	Inverse Hyperbolic Function: Evaluating the values of Inverse hyperbolic functions, Definition, identities, domain, range, Graphs.
Week 12	Inverse Hyperbolic Function: Derivatives, finite and infinite Integration, Application of Inverse hyperbolic functions in Electrical prospective.
Week 13	Vectors: vector notation, scalar and vector quantities, vectors in space, scalar product of two vectors, cross product of two vectors, angle between two vectors.
Week 14	Polar Coordinates: graphing polar coordinates, test of symmetry for polar graphs.

Week 15	Polar Coordinates: Cardiographs, flower graphs with various number vertices, Equations relating polar and Cartesian coordinates, Calculation of length for a polar curve.
Week 16	Preparatory week before the final Exam

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	3. Hass, Joel, Christopher Heil, Maurice D. Weir, and George B. Thomas, <i>Thomas' calculus</i> , Pearson, thirteen Edition. 4. Courant, Richard, and Fritz John, <i>Introduction to calculus and analysis I</i> , Springer Science & Business Media, 2012.	Yes
Recommended Texts	3. Stewart, James, Daniel K. Clegg, and Saleem Watson, <i>Calculus: early transcendentals</i> , Cengage Learning, 2020. 4. Jerrold Marsden and Alan Weinstein, <i>Calculus I</i> , Second Edition, Springer-Verlag New York Berlin Heidelberg	Yes
Websites	https://tutorial.math.lamar.edu/	

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

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

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	Basics of Electrical Engineering II		Module Delivery
Module Type	Core		<input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input checked="" type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	UOBAB 0103022		
ECTS Credits	5		
SWL (hr/sem)	125		
Module Level	1	Semester of Delivery	
Administering Department	Electrical Engineering	College	College of Engineering
Module Leader	Dr. Saad Saffah Hreshee	e-mail	Eng.saad.saffah@uobabylon.edu.iq
Module Leader's Acad. Title	Professor	Module Leader's Qualification	Ph.D.
Module Tutor	Dr. Saad Saffah Hreshee	e-mail	Eng.saad.saffah@uobabylon.edu.iq
Peer Reviewer Name	Dr. Kasim Karamm Abdalla	e-mail	eng.kassim.kerem@uobabylon.edu.iq
Scientific Committee Approval Date	01/06/2023	Version Number	1.0

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	Basics of Electrical Engineering I (UOBAB 0103012)	Semester	1
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

<p>Module Aims</p> <p>أهداف المادة الدراسية</p>	<p>The module "Basics of Electrical Engineering II" aims to provide students with a comprehensive understanding of the principles, concepts, and applications specific to alternating current (AC) electrical systems. The specific aims of this module are the following objectives:</p> <ol style="list-style-type: none">1. Introduction to AC Electrical Systems: The module aims to introduce students to AC electrical systems. Students will learn about the advantages of AC over DC, the basics of sinusoidal waveforms, and the concept of phasors.2. AC Circuit Analysis: Students will develop skills in analyzing AC circuits, including passive circuit elements such as resistors, capacitors, and inductors. They will learn about impedance, reactance, and complex numbers in the context of AC circuits. The module aims to equip students with the ability to solve AC circuit problems using phasor analysis and complex algebra.3. AC Power Analysis: The module aims to provide students with an understanding of power in AC circuits. Students will learn about active power, reactive power, and apparent power, as well as power factor and power factor correction techniques. The module will cover the analysis of power in single-phase and three-phase AC systems.4. Laboratory Skills: The module includes laboratory sessions where students can apply theoretical concepts to practical situations. Students will gain hands-on experience in AC circuit analysis, power measurement, and the use of relevant laboratory instruments and equipment. <p>Overall, the module "Basics of Electrical Engineering II" aims to provide students with a strong foundation in the principles and applications of AC electrical systems. It equips them with the necessary knowledge and skills to analyze AC circuits, understand power generation. This knowledge will be valuable in various industries such as power systems, renewable energy, electrical equipment manufacturing, and automation.</p>
<p>Module Learning Outcomes</p> <p>مخرجات التعلم للمادة الدراسية</p>	<p>Upon completion of the module "Basics of Electrical Engineering II" students are expected to achieve the following learning outcomes:</p> <ol style="list-style-type: none">1. Understanding of AC Electrical Principles: Students should demonstrate a solid understanding of the principles and concepts specific to AC electrical systems, including sinusoidal waveforms, phasors, impedance, and reactance.2. Competence in AC Circuit Analysis: Students should be able to analyze and solve AC circuits using phasor analysis and complex algebra. They should be able to calculate voltage, current, power, and other parameters in AC circuits accurately.3. Knowledge of AC Power Analysis: Students should have a good understanding of power in AC circuits, including active power, reactive power, and apparent power. They should be able to calculate power factor and understand power factor correction techniques.

	<p>4. Laboratory Skills: Students should have developed practical skills through laboratory sessions. They should be able to apply theoretical concepts to practical situations, including AC circuit analysis, power measurement, and the use of laboratory instruments and equipment.</p> <p>5. Critical Thinking and Problem-Solving Skills: Students should have developed critical thinking and problem-solving skills specific to AC electrical engineering. They should be able to analyze and solve complex AC electrical engineering problems, identify and evaluate different solution strategies, and make informed decisions.</p> <p>6. Communication and Presentation Skills: Students should be able to effectively communicate their ideas, solutions, and findings related to AC electrical engineering. They should be capable of presenting technical information clearly and concisely, both orally and in written form.</p> <p>By achieving these learning outcomes, students will have a strong foundation in AC electrical engineering principles and applications. They will be prepared to further their studies or apply their knowledge in various industries such as power systems, renewable energy, electrical equipment manufacturing, and automation, where AC electrical systems are prevalent.</p>
<p>Indicative Contents المحتويات الإرشادية</p>	<p>Part A - AC Circuit Theory</p> <p>Basic concepts of AC circuits, Current and voltage definitions, Passive circuit elements (resistance, capacitance, and inductance) , Capacitor, [11 hrs].</p> <p>Magnetic circuits, Electromagnetic induction and inductor, [11 hrs].</p> <p>Sinusoidal alternating waveforms, Root-mean-square (R.M.S.) and Average values , [11 hrs].</p> <p>Phasors and complex number representation, Phasor relationships for circuit elements, [11 hrs].</p> <p>Combining resistive, capacitive, and inductive elements in series and parallel, [11 hrs].</p> <p>Part B – AC Circuit Analysis</p> <p>Sinusoidal steady-state analysis, Kirchhoff’s laws in the frequency domain, [10 hrs].</p> <p>Nodal and Mesh Analysis, [10 hrs].</p> <p>Superposition theorem, [10 hrs].</p> <p>Thévenin and Norton Equivalent circuits , [10 hrs].</p> <p>AC power analysis, active and reactive power, [10 hrs].</p> <p>The complex power and power triangle, [10 hrs].</p> <p>Resonance, [10 hrs].</p>

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies

The module "Basics of Electrical Engineering" can employ various learning and teaching strategies to enhance students' understanding and engagement. Here are some common strategies used in this module:

20. Lectures: Lectures are a primary teaching method in this module, where instructors deliver theoretical concepts, principles, and explanations. Lectures can include visual aids such as slides, diagrams, and animations to facilitate understanding. Instructors may also provide real-life examples and applications to make the content more relatable.
21. Practical Examples and Problem-Solving: Instructors can use practical examples and problem-solving exercises to help students apply theoretical concepts to real-world situations. By presenting and solving problems related to electrical circuits, students can develop critical thinking and analytical skills.
22. Laboratory Work: Laboratory sessions provide hands-on experience and reinforce theoretical concepts. Students can perform experiments and measurements using electrical components and instruments. This allows them to apply theoretical knowledge, gain practical skills, and understand the behavior of electrical systems in a controlled environment.
23. Group Discussions and Collaborative Learning: Group discussions and collaborative learning activities encourage students to engage actively in the learning process. Students can work together to solve problems, analyze case studies, or discuss challenging concepts. This promotes peer learning, critical thinking, and communication skills.
24. Tutorials and Workshops: Tutorials and workshops offer opportunities for students to seek additional help and clarification on specific topics. Instructors or teaching assistants can provide individual or small-group assistance, address students' questions, and guide them through problem-solving exercises.
25. Multimedia and Interactive Tools: Multimedia resources, such as videos, animations, and interactive simulations, can be used to enhance understanding and engage students. These resources can provide visual representations of abstract concepts and allow students to interact with the content, fostering active learning.
26. Guest Lectures and Industry Visits: Inviting guest speakers from industry or conducting visits to electrical engineering-related facilities can provide students with real-world perspectives and insights. Professionals can share their experiences, current trends, and practical applications, giving students a broader understanding of the field.

27. Assessments and Feedback: Regular assessments, such as quizzes, assignments, and exams, can be used to evaluate students' understanding and progress. Constructive feedback helps students identify areas for improvement and reinforces their learning. Feedback can be provided through written comments, discussions, or one-on-one consultations.
28. Online Resources and Platforms: Online resources, such as e-learning platforms, online forums, and educational websites, can support student learning outside the classroom. These resources can provide additional readings, practice exercises, and interactive modules to supplement classroom teaching.
29. Self-directed Learning: Encouraging students to take ownership of their learning through self-directed study is important. Students can explore additional resources, conduct independent research, and deepen their understanding of specific topics. This cultivates lifelong learning skills and promotes curiosity in the field of electrical engineering.

By combining these learning and teaching strategies, the module "Basics of Electrical Engineering" aims to create an interactive and engaging learning environment that caters to different learning styles, promotes critical thinking, and prepares students for further studies and professional practice in electrical engineering.

Student Workload (SWL)			
الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعياً	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	62	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	4.133
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation

تقييم المادة الدراسية

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

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Capacitors
Week 2	Magnetic circuits
Week 3	Electromagnetic induction and inductor
Week 4	Sinusoidal alternating waveforms
Week 5	Root-mean-square (R.M.S.) and Average values
Week 6	Phasors and complex number representation
Week 7	Phasor relationships for circuit elements
Week 8	Mid-term Exam + Introduction to Sinusoidal steady-state analysis
Week 9	Sinusoidal steady-state analysis, Kirchhoff's laws in the frequency domain
Week 10	Sinusoidal steady-state analysis, Nodal and Mesh Analysis
Week 11	Sinusoidal steady-state analysis, Superposition theorem
Week 12	Sinusoidal steady-state analysis, Thévenin and Norton Equivalent circuits
Week 13	AC power analysis, active and reactive power
Week 14	The complex power and power triangle
Week 15	Resonance

Week 16	Preparatory week before the final Exam
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Learning and Teaching Resources		
مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	Fundamentals of Electric Circuits, 4 th edition, C.K. Alexander and M.N.O Sadiku, McGraw-Hill Education	Yes
Recommended Texts	Introduction to Circuit Analysis, 10 th edition, Boylestad .	Yes
Websites		

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

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	Digital Techniques		Module Delivery
Module Type	Core learning activity		<input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	UOBAB 0103023		
ECTS Credits	6		
SWL (hr/sem)	150		
Module Level	1	Semester of Delivery	
Administering Department	Electrical Engineering	College	Engineering collage
Module Leader	Qais Kareem Omran	e-mail	eng.qais.karem@uobabylon.edu.iq
Module Leader's Acad. Title	Professor	Module Leader's Qualification	PhD
Module Tutor	Dr. Qais Kareem Omran	e-mail	eng.qais.karem@uobabylon.edu.iq
Peer Reviewer Name	Dr. Saad Saffah	e-mail	eng.saad.saffah@uobabylon.edu.iq
Scientific Committee Approval Date	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

<p>Module Aims</p> <p>أهداف المادة الدراسية</p>	<p>The aims of this modules</p> <ul style="list-style-type: none">a) Distinguish between digital and analog system.b) Acquire knowledge about decimal and binary number systems and the conversion between each other in additional to binary arithmetic.c) Learn about the Hexadecimal, Octal and Binary coded decimal (BCD).d) Understand basic concepts of logic operations and Boolean algebra laws and its theorems.e) Able to simplify Boolean expressions with methods of Sums-of-Products (SOP) and Product-of-sums (POS) forms.f) Convert between Standard SOP and POS.g) Construct Karnaugh map and how to minimize it.h) Understand the basics of Adders, Comparator, Decoders, Encoders, multiplexer and Demultiplexer.i) Learn about Latches and Flip-Flops and their functionalities.j) Understand and design counters (synchronous and asynchronous) and shift registers.
<p>Module Learning Outcomes</p> <p>مخرجات التعلم للمادة الدراسية</p>	<p>On completion of this module students are expected to:</p> <ul style="list-style-type: none">1: Students should be able to understand the basics of digital and analog system.2: Students should be able to comprehend the number systems and be able to deal with Binary, Hexadecimal, Octal and Binary coded decimal.3: Students should be able to solve problems about number base conversion and arithmetic operation in different system of numbers.4: Student are expected to learn the basic concepts, operation, and truth tables of the digital logic gates.5: Students are expected to learn the basic definitions, basic theorem, rules, and properties of Boolean algebra and how to perform simplification of Boolean expressions with the help of rules of Boolean algebra.6: Students are expected to learn how to deal with Sum of Products form (SOP) and Product of Sum form (POS).7: Students are expected to learn how to deal with Karnaugh mapping techniques and its applications for simplification of Boolean expression.8: Students are expected to learn the basics of adders, Adders, Comparator, Decoders, Encoders, multiplexer, Demultiplexer, Latches, Flip-Flops, counters and shift registers.9. Students should be able to search for topics online and make reports.

<p style="text-align: center;">Indicative Contents المحتويات الإرشادية</p>	<p>Indicative content includes the following.</p> <p>PART (1): Introduction to Digital and Analogue systems, Digital representation, Advantages of digital, Digital waveforms, Decimal and binary number systems, Binary to Decimal Conversion and vice versa, Binary Arithmetic, Hexadecimal Numbers, Octal Numbers, Binary Coded Decimal (BCD) [10 hrs.]</p> <p>PART (2): Basic logic operations, Basic logic gates, Logic circuit diagrams, Laws and theorems of Boolean Algebra, DeMorgan’s Theorem, Boolean expression reduction, Truth table, Sums-of-products (SOP) and Product-of-sums (POS) and their standard forms, Conversion of SOP to POS and vice versa, Construction of a truth table from SOP and POS forms and vice versa [12 hrs.]</p> <p>PART (3): Karnaugh Maps, variables in Karnaugh Maps (3 and 4 variables), cell adjacency in Karnaugh Maps, Mapping truth table into Karnaugh Map, Mapping SOP and POS forms into Karnaugh Map, Finding the minimum SOP and POS forms using Karnaugh Map [12 hrs.]</p> <p>PART (4): Binary arithmetic operation, Half and Full adder, Parallel binary adders, Ripple Carry adder, Comparators, Decoders, Encoders, Multiplexers and Demultiplexers [8 hrs.]</p> <p>PART (5): Introduction to Latches and Flip-flops, the logic circuit and operation of Set Reset Latch (SR Latch), The logic circuit and operation of Data Latch (D Latch), The logic circuit and operation of Jack Kilby Latch (JK Latch), The gated latches, Latches applications, Edge triggered Flip-flops and their types, Flip-flops applications, Introduction to Counters and shift registers. Introduction to the types of Counters and shift registers [15hrs.]</p>
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<p>Learning and Teaching Strategies استراتيجيات التعلم والتعليم</p>	
<p>Strategies</p>	<p>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.</p>

Student Workload (SWL)

الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	93	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعياً	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	57	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	3.8
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 , 10	LO # 3 and 4, 7 and 8
	Assignments	2	10% (10)	6 , 12	LO # 4 and 5, 9 and 10
	Lab.	2	20% (20)	Continuous	
	Report				
Summative assessment	Midterm Exam	2 hr	10% (10)	8	LO # 1-8
	Final Exam	3hr	50% (50)	16 or 17	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الأسبوعي النظري

Material Covered	
Week 1	Brief review: The basic concepts of digital techniques, the difference between analog and digital signals, the advantages of digital systems, the digital systems applications, and the basic definitions of the digital techniques.
Week 2	System of numbers: decimal, binary, octal, and hexadecimal, numbers base conversion and arithmetic operation in different system of numbers.
Week 3	Number base conversion and arithmetic operation in different system of numbers.

	The concepts of complements, Binary codes, binary coded decimal (BCD).
Week 4	Binary arithmetic: addition subtraction, multiplication, and division.
Week 5	The basic concepts, operation, and truth tables of the digital logic gates and the pulse operation of logic gates.
Week 6	The basic definitions, basic theorem, rules, and properties of Boolean algebra.
Week 7	The simplification of Boolean expressions with the help of rules of Boolean algebra (part 1)
Week 8	Mid Term Examination + The simplification of Boolean expressions with the help of rules of Boolean algebra (Part 2 and Demorgan's theorems).
Week 9	Introduction to the Sum of Products form (SOP) and Product of Sum form (POS).
Week 10	The basic concepts of Karnaugh mapping techniques.
Week 11	The applications of Karnaugh mapping techniques for simplification of Boolean expression.
Week 12	Basic adders (Half and full adders), parallel binary adders and comparator.
Week 13	The basic concepts of Decoders, Encoders, multiplexer, and Demultiplexer.
Week 14	The basic concepts of Latches and Flip-Flops
Week 15	The basic concepts of Counters and shift registers.
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Basic introduction
Week 2	The basic concepts and operation of the digital logic gates (part1)
Week 3	The basic concepts and operation of the digital logic gates (part2)
Week 4	The basic concepts of truth tables
Week 5	The basic concepts of Binary arithmetic
Week 6	The rules of Boolean algebra
Week 7	Demorgan's theorems
Week 8	Mid-term Exam + The basic concepts of Sum of Products form (SOP)
Week 9	The basic concepts of Product of Sum form (POS)

Week 10	The basic concepts of Karnaugh mapping techniques (part1)
Week 11	The basic concepts of Karnaugh mapping techniques (part2)
Week 12	The basic concepts of Half and full adders.
Week 13	The basic concepts of Decoders, Encoders, multiplexer, and Demultiplexer
Week 14	The basic concepts of Flip-Flops
Week 15	The basic concepts of Counters and shift registers
Week 16	Preparatory week before the final Exam

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	1- Digital Fundamentals, 9th edition, Thomas L. Floyd.	Yes
Recommended Texts	1-Introduction to Logic Design, 3rd Edition, Alan B. Marcovitz.	No
Websites		

Grading Scheme

مخطط الدرجات

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

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

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	Principles of Computers II		Module Delivery
Module Type	Basic		<input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input checked="" type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	UOBAB 0103024		
ECTS Credits	4		
SWL (hr/sem)	100		
Module Level	1	Semester of Delivery	
Administering Department	Electrical engineering	College	College of Engineering
Module Leader	Dr. Hanaa Mohsin Ali	e-mail	hanaa.ali@uobabylon.edu.iq
Module Leader's Acad. Title	Assistant Professor	Module Leader's Qualification	Ph.D.
Module Tutor	Dr. Hanaa Mohsin Ali	e-mail	Hanaa.ali@uobabylon.edu.iq
Peer Reviewer Name	Dr. Kasim Karamm Abdalla	e-mail	eng.kassim.kerem@uobabylon.edu.iq
Scientific Committee Approval Date	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

<p>Module Aims أهداف المادة الدراسية</p>	<p>This course provides an in-depth analysis of the fundamental principles of computer science that focus on problem-solving methods. The exposition of these principles is fully reinforced by many practical problems that illustrate the concepts discussed.</p> <ol style="list-style-type: none">13. The skills goals are special to the course.14. Students should be able to understand the analysis of computer science and problem-solving methods successfully.15. Students should be able to solve practical problems.16. Students should be able to understand and use different types of problem-solving techniques such as Algorithms and flowcharts.17. Students should be able to search topics online and make reports. Study how can employ problem-solving techniques to sort out real-time problems.18. Define and describe algorithms.19. Define and describe flowcharts.20. Define and describe Pseudocode.21. Practical examples for applying problem-solving methods in different fields such as engineering.22. Studying and understanding programming languages.23. Understanding visual basics as a high-level programming language.24. Understand the visual basics of window structures and contents.25. Understand read and write constants and variables26. Built a system using visual basics.27. Understand the loop and if statement
<p>Module Learning Outcomes مخرجات التعلم للمادة الدراسية</p>	<ol style="list-style-type: none">1. applying problem-solving methods in different fields such as engineering.2. Studying and understanding programming languages.3. Understanding visual basics as a high-level programming language.4. Understand the visual basics structures and contents.5. read and write constants and variables in visual basic6. Built a system using visual basics.7. Understand the loop and if statements.
<p>Indicative Contents المحتويات الإرشادية</p>	<p>Part 1: Study how can employ problem-solving techniques to sort out real-time problems. Define and describe algorithms. Define and describe</p>

	<p>flowcharts. Define and describe Pseudocode. Practical examples for applying problem-solving methods in different fields such as engineering. Studying and understanding programming languages. Understanding visual basics as a high-level programming language [20 hrs.].</p> <p>Part 2: Understand the visual basics of window structures and contents. Understand read and write constants and variables. Built a system using visual basics. Understand the loop and if statement [17 hrs.].</p>
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Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	4. Learning Technologies on Campus using Whiteboard and TV monitor. 5. Hand out lecture notes. 6. Video lectures on YouTube and google classroom.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعياً	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	37	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	2.466
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	3	10% (10)	5, 7 and 15	LO # 1, 2 and 3
	Assignments	3	10% (10)	5, 7 and 15	LO # 1, 2 and 3
	Projects/Lab	3	20% (10)	Continuous	
	Report				

Summative assessment	Midterm Exam	2 hrs.	10% (10)	8	LO # 1-7
	Final Exam	3hr	50% (50)	16 or 17	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction to computer programming (definition, functionalities)
Week 2	Problem-solving and information theory
Week 3	Operating system – MS-DOS system (log in, type commands, error-command, read directory and display directory contents)
Week 4	Problem-solving methods
Week 5	Algorithms and their characteristics and rules
Week 6	flowcharts and their characteristics and rules
Week 7	Pseudocode and their characteristics and rules
Week 8	Mid-term Exam + examples about apply the problem-solving methods in mathematical fields
Week 9	Applying problem-solving methods in engineering fields
Week 10	Examples about flowcharting
Week 11	Example about algorithms
Week 12	Transfer an algorithm to a flowchart and verse versa
Week 13	Compare the algorithm and flowchart, which one is better for problem-solving
Week 14	Applying advanced examples using problem-solving techniques
Week 15	Transfer the algorithm into the program and transfer the flowchart into the program.
Week 16	A preparatory week before the Final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Introduction of visual basic
Week 2	Understanding the visual basic structure

Week 3	Read and write functions in coding
Week 4	Variables and constants
Week 5	Great blocks for simple program
Week 6	Solve mathematical examples using visual basics
Week 7	Build a simple interface in visual basic
Week 8	Mid-term Exam
Week 9	Understand the counter
Week 10	Applying 'for loop statements
Week 11	Applying the 'while statement'
Week 12	Applying the 'if statement'
Week 13	Solve some advanced problems using for loop and if statement
Week 14	Practice different types of engineering and math example
Week 15	Revision
Week 16	Final exam

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	1- Programming and Problem Solving: An Introduction to Computer Science by David A. Freitag (Author) 2- Visual Basic in easy steps, 6th edition: Updated for Visual Basic 2019 Kindle Edition by Mike McGrath	no
Recommended Texts	1- Algorithmic Problem Solving, 7 October 2011 by Roland Backhouse (Author)	no
Websites	https://www.edrawsoft.com/explain-algorithm-flowchart.html	

Grading Scheme

مخطط الدرجات

Group	Grade	التقدير	Marks (%)	Definition
Success Group	A - Excellent	امتياز	90 - 100	Outstanding Performance

(50 - 100)	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 is required but credit awarded
	F – Fail	راسب	(0-44)	A considerable amount of work required

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

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	Principles of Mechanical Engineering		Module Delivery
Module Type	Basic		<input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input checked="" type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	UOBAB0103025		
ECTS Credits	6		
SWL (hr/sem)	150		
Module Level	UGI	Semester of Delivery	
Administering Department	Electrical Engineering	College	Engineering College
Module Leader	Mr. mohammed Yousif Jabbar	e-mail	eng.mohammed.yousif@uobabylon.edu.iq
Module Leader's Acad. Title	Professor	Module Leader's Qualification	PhD
Module Tutor	Mr. mohammed Yousif Jabbar	e-mail	eng.mohammed.yousif@uobabylon.edu.iq
Peer Reviewer Name	N.A	e-mail	N.A.
Scientific Committee Approval Date	1/06/2023	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

<p>Module Aims أهداف المادة الدراسية</p>	<ol style="list-style-type: none">1- To learn the basic quantities and idealizations of mechanics.2- To learn expressing forces and position in Cartesian vector form and explaining how to determine the vector's magnitude and direction.3- To learn the concept of the free-body diagram for a particle and rigid body and equilibrium problems.4- To learn finding moments, couples, and resultants.5- To analyze the forces in the truss, frames, and machines.6- To learn finding the centroid of the 1D, 2D, and 3D figures and bodies.7- To learn the concept of dry friction and how to analyze the equilibrium of rigid bodies subjected to this force such as wedges, screw, and belts.8- To learn determining the moment of inertia for different 2D shapes.
<p>Module Learning Outcomes مخرجات التعلم للمادة الدراسية</p>	<ol style="list-style-type: none">1. Students would have the ability to analyze forces, moments and resultants in 2D and 3D structures.2. Students would have the ability to draw the free body diagram of any structure.3. Students intended to have the ability of analyzing the forces in the trusses and frames.4. Learning how to find the centroid of different shapes and volumes.5. Learning the types of friction and its applications in the mechanical engineering field.6. Learning how to find the moment of inertia of different shapes.
<p>Indicative Contents المحتويات الإرشادية</p>	<p>1-Basic Concepts, Scalars and Vectors Newton's Laws, Units, and Law of Gravitation [4 hrs]</p> <p>2-Force, TWO-DIMENSIONAL FORCE SYSTEMS, Rectangular Components, Moment, Couple, and Resultants [6 hrs]</p> <p>3-THREE-DIMENSIONAL FORCE SYSTEMS, Rectangular Components, Moment and Couple, and Resultants [8 hrs]</p> <p>4-EQUILIBRIUM IN TWO DIMENSIONS, System Isolation and the Free-Body Diagram, Equilibrium Conditions, EQUILIBRIUM IN THREE DIMENSIONS, and Equilibrium Conditions [8 hrs]</p> <p>5-Plane Trusses, Method of Joints, Method of Sections, and Frames and Machines [10 hrs]</p>

	<p>6-CENTERS OF MASS AND CENTROIDS, Center of Mass, Centroids of Lines, Areas, and Volumes Composite Bodies and Figures, and Approximations [8 hrs]</p> <p>7-FRICTIONAL PHENOMENA, Types of Friction, Dry Friction, and APPLICATIONS OF FRICTION IN MACHINES, Wedges, Screws, and Flexible Belts [8 hrs]</p> <p>8-AREA MOMENTS OF INERTIA, Definitions, and Composite Areas [5 hrs]</p>
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Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	<p>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.</p>

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	93	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	6.2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	57	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.8
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5, 10	LO # 1, 2, 3, and 4
	Assignments	2	10% (10)	5, 12	LO # 1, 2, 3 and 5
	workshop	1	10%(10)	continuous	

	Report	1	10% (10)	13	LO # 1-5
Summative assessment	Midterm Exam	2 hrs	10% (10)	10	LO # 1-4
	Final Exam	3 hrs	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Basic Concepts Scalars and Vectors Newton's Laws Units Law of Gravitation
Week 2	Force TWO-DIMENSIONAL FORCE SYSTEMS Rectangular Components Moment Couple Resultants
Week 3	THREE-DIMENSIONAL FORCE SYSTEMS Rectangular Components Moment and Couple Resultants
Week 4	EQUILIBRIUM IN TWO DIMENSIONS System Isolation and the Free-Body Diagram Equilibrium Conditions
Week 5	EQUILIBRIUM IN THREE DIMENSIONS Equilibrium Conditions
Week 6	Plane Trusses Method of Joints
Week 7	Plane Trusses Method of Sections
Week 8	Frames and Machines
Week 9	FRictional PHENOMENA Types of Friction Dry Friction
Week 10	Midterm Exam. Dry Friction
Week 11	APPLICATIONS OF FRICTION IN MACHINES (Wedges and Screws)
Week 12	APPLICATIONS OF FRICTION IN MACHINES (Flexible Belts)

Week 13	CENTERS OF MASS AND CENTROIDS Center of Mass Centroids of Lines, Areas, and Volumes
Week 14	CENTROIDS of Composite Bodies and Figures; Approximations
Week 15	Definitions of AREA MOMENTS OF INERTIA and AREA MOMENTS OF INERTIA of Composite Areas
Week 16	Preparatory week before the final Exam

Workshop	Operations
First	Familiarization with workshops and safety measured
Second	Welding
Third	Machining (milling and surfacing)
Fourth	Filing
Fifth	Turnings
six	Casting

Learning and Teaching Resources		
مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	ENGINEERING MECHANICS-STATICS by J . L . MERIAM and L . G . KRAIGE.	Yes
Recommended Texts	ENGINEERING MECHANICS-STATICS by R. C. Hibbeler	No
Websites		

Grading Scheme

مخطط الدرجات

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

نموذج وصف المادة الدراسية

Module Information			
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Administering Department	Electrical Engineering	College	Engineering College
Module Leader	Mr. mohammed Yousif Jabbar	e-mail	eng.mohammed.yousif@uobabylon.edu.iq
Module Leader's Acad. Title	Professor	Module Leader's Qualification	PhD
Module Tutor	Mr. mohammed Yousif Jabbar	e-mail	eng.mohammed.yousif@uobabylon.edu.iq
Peer Reviewer Name	N.A	e-mail	N.A.
Scientific Committee Approval Date	1/06/2023	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

<p>Module Aims أهداف المادة الدراسية</p>	<p>9- To learn the basic quantities and idealizations of mechanics.</p> <p>10- To learn expressing forces and position in Cartesian vector form and explaining how to determine the vector's magnitude and direction.</p> <p>11- To learn the concept of the free-body diagram for a particle and rigid body and equilibrium problems.</p> <p>12- To learn finding moments, couples, and resultants.</p> <p>13- To analyze the forces in the truss, frames, and machines.</p> <p>14- To learn finding the centroid of the 1D, 2D, and 3D figures and bodies.</p> <p>15- To learn the concept of dry friction and how to analyze the equilibrium of rigid bodies subjected to this force such as wedges, screw, and belts.</p> <p>16- To learn determining the moment of inertia for different 2D shapes.</p>
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Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

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Learning and Teaching Resources

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نموذج وصف الوحدة

نموذج وصف المادة الدراسية

معلومات الوحدة			
معلومات المادة الدراسية			
عنوان الوحدة	حرية وديمقراطية		تسليم الوحدة
نوع الوحدة	B		<input checked="" type="checkbox"/> نظريه <input type="checkbox"/> قراءة <input type="checkbox"/> المختبر <input checked="" type="checkbox"/> تعليمي <input type="checkbox"/> عملي <input type="checkbox"/> الحلقة الدراسية
رمز الوحدة	UOBAB 0103046		
ECTS انتماتات	2		
SWL (ساعة / SEM)	50		
مستوى الوحدة	2	الفصل الدراسي للتسليم	
الإدارة الإدارية	قسم الهندسة الكهربائية	الكلية	كلية الهندسة
قائد الوحدة	رباب ناجي عبد	البريد الإلكتروني	rabababd565@gmail.com
لقب قائد الوحدة	مدرس مساعد	مؤهلات قائد الوحدة	
مدرس الوحدة	رباب ناجي عبد	البريد الإلكتروني	rabababd565@gmail.com
اسم المراجع النظير	البريد الإلكتروني		
تاريخ اعتماد اللجنة العلمية	2023/6/1	رقم الإصدار	1.0

العلاقة مع الوحدات الأخرى		
العلاقة مع المواد الدراسية الأخرى		
وحدة المتطلبات الأساسية	الفصل الدراسي	
وحدة المتطلبات المشتركة	الفصل الدراسي	

أهداف الوحدة ونتائج التعلم والمحتويات الإرشادية

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

<p>أهداف المادة الدراسية</p>	<ol style="list-style-type: none">1. تطوير مهارات حل المشكلات وفهم ما ينص عليه الدستور والقانون .2. لفهم حقوق الانسان بشكل واضح .3. يتناول هذا المساق المفهوم الأساسي لحقوق الانسان .4. هذا هو الموضوع الأساسي لحقوق الانسان والديمقراطية .5. لفهم القوانين وكيفية استثمارها
<p>مخرجات التعلم للوحدة</p> <p>مخرجات التعلم للمادة الدراسية</p>	<ol style="list-style-type: none">13. التعرف على كيفية على حقوق الخاصة .14. لخص المقصود بحقوق الانسان .15. مناقشة انواع حقوق الانسان .16. وصف انواع حقوق الانسان17. حدد قانون حقوق الانسان18. التعرف على كيفية معرفة حقوق الانسان .19. ناقش الوسائل القانونية لحماية حقوق الانسان .20. ناقش الوسائل القضائية لحماية حقوق الانسان .21. اشرح جرائم حزب البعث المنحل .22. تحديد علاقة حقوق الانسان والديمقراطية .
<p>المحتويات الإرشادية</p>	<p>يتضمن المحتوى الإرشادي ما يلي.</p> <p>الجزء أ – حقوق الانسان</p> <p>مفهوم حقوق الانسان _ تعريف الحق – عناصر الحق او اركان الحق انواع الحقوق التي يحميها القانون – تصنيف انواع حقوق الانسان . [ساعتان]</p> <p>مفهوم حقوق الانسان وفق الاعلان العالمي لحقوق الانسان والمواطن الفرنسي سنة 1798 . (ساعة واحدة)</p> <p>حقوق الانسان والمواطن العراقي وفق دستور جمهورية العراق لسنة 2005 ، الحق في الحياة ، الحق في الكرامة والحرية ، الحق في الكرامة الشخصية ، الحق في الخصوصية ، الحق في الجنسية .(ساعتان)</p> <p>وسائل حماية حقوق الانسان يمكن معرفتها عبر الوسائل القانونية لحماية حقوق الانسان المتمثلة بـ الدستور والتشريع العادي الذي يمثل على سبيل المثال قانون العقوبات ، قانون اصول المحاكمات الجزائية .(ساعتان)</p>

ضمانات حقوق الانسان ، رقابة السلطة القضائية على السلطة التشريعية ، رقابة السلطة القضائية على السلطة على اعمال السلطة التنفيذية. (ساعة واحدة)

الوسائل السياسية لحقوق الانسان ، على الصعيد الداخلي المتمثلة ب الاحزاب السياسية ومنظمات المجتمع المدني ، الرأي العام ، على الصعيد الدولي الاقليمي ، والمنظمات الغير الحكومية . (ساعة واحدة).

حق المشاركة في ادارة الشؤون العامة ، الحقوق العامة تنقسم الى حق التوظيف حق المطالبة السلطات العامة ، حق المساواة ، والحقوق السياسية المتمثلة ب حق الانتخاب ، حق الترشيح (ساعة واحدة)

جرائم التصفية ، تصفية رجال الدين ، تصفية المعارضين ، المقابر الجماعية والاباة الجماعية ، وجرائم الحروب الداخلية والخارجية (ساعتان).

الجزء ب / الديمقراطية

تعريف الديمقراطية اصطلاحاً ، تاريخ الديمقراطية ، الحرية والديمقراطية ، خصائص الديمقراطية المتمثلة بالدستور القانون حرية التعبير عن الرأي ، حرية تكوين الاحزاب السياسية ، استقلال السلطة القضائية .(ساعتان)

اركان الديمقراطية المتمثلة ب الانتخابات ، التسامح السياسي ،سيادة القانون ، حرية التعبير ، المساواة والشفافية ، اللامركزية ، المجتمع المدني (ساعة واحدة).

انواع الديمقراطية المتمثلة ب الديمقراطية الرئاسية ، الديمقراطية البرلمانية ، الاستبدادية ،التشاركية ، التداولية ، الدستورية اللبرالية ، الشمولية .(ساعة واحدة)

اهداف الديمقراطية / حماية الحقوق ، المساواة ، الحرية ، حكم الشعب بنفسه ، محاسن الديمقراطية مساوى الديمقراطية. (ساعة واحدة)

استراتيجيات التعلم والتعليم

استراتيجيات التعلم والتعليم

يكون الطالب قادراً على تطوير مهارات حل المشكلات وفهم ماينص عليه الدستور والقانون .لفهم حقوق الانسان بشكل واضح .يتناول هذا المساق المفهوم الأساسي لحقوق الانسان . هذا هو الموضوع الأساسي لحقوق الانسان والديمقراطية . لفهم القوانين وكيفية استثماره

استراتيجيات

عبء عمل الطالب (SWL) الحمل الدراسي للطالب			
2	SWL منظم (ح / ث) الحمل الدراسي المنتظم للطالب أسبوعيا	33	SWL منظم (h / sem) الحمل الدراسي المنتظم للطالب خلال الفصل
1.1	SWL غير منظم (ح / ث) الحمل الدراسي غير المنتظم للطالب أسبوعيا	17	SWL غير منظم (h / sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل
		50	إجمالي (SWL (h / sem) الحمل الدراسي الكلي للطالب خلال الفصل

تقييم الوحدة تقييم المادة الدراسية					
نتائج التعلم ذات الصلة	الأسبوع المستحق	الوزن (بالعلامات)	الوقت/الرقم		
LO # All	4,9, 12	10% (10)	3	مسابقات	التقييم التكويني
LO # 3, 4, 6 and 9	2,7, 10	10% (10)	3	تعيينات	
	Continuous	10% (10)	1	المشاريع	
LO # All	13	10% (10)	1	تقرير	
LO # 1-9	8	10% (10)	2 hr	الامتحان النصفى	التقييم الختامى
All	16	50% (50)	3 hr	الامتحان النهائى	
		100% (100 Marks)	التقييم الإجمالي		

خطة التسليم (المنهج الأسبوعي) المنهاج الاسبوعي النظري	
المواد المغطاة	
مقدمة – حقوق الانسان	الأسبوع 1
تعريف حقوق الانسان	الأسبوع 2
أنواع حقوق الانسان	الأسبوع 3
وسائل حماية حقوق الانسان	الأسبوع 4
الوسائل القانونية لحماية حقوق الانسان	الأسبوع 5
الوسائل القضائية لحقوق الانسان	الأسبوع 6
تصنيف حقوق الانسان	الأسبوع 7
جرائم حزب البعث المنحل + الامتحان النصفى	الأسبوع 8
جرائم التصفية	الأسبوع 9

اسبوع 10	جرائم الإبادة الجماعية
اسبوع 11	جرائم الحروب الداخلية والخارجية
اسبوع 12	تعريف الديمقراطية
اسبوع 13	الحقوق والديمقراطية
اسبوع 14	اركان الديمقراطية وأهدافها
اسبوع 15	محاسن و مساوى الديمقراطية
اسبوع 16	الأسبوع التحضيري قبل الامتحان النهائي

خطة التسليم (منهج المختبر الأسبوعي)

المنهاج الاسبوعي للمختبر

الأسبوع	المواد المغطاة	لا يوجد
الأسبوع 1	_____	
الأسبوع 2	_____	

مصادر التعلم والتعليم

مصادر التعلم والتدريس

متوفر في المكتبة؟	نص	
نعم	مصادر حقوق الانسان من دستور وقانون	النصوص المطلوبة
نعم	مصادر حقوق الانسان من دستور وقانون	النصوص الموصى بها
	مواقع الانترنت	المواقع الإلكترونية

مخطط الدرجات

مخطط الدرجات

مجموعة	درجة	التقدير	العلامات (%)	تعريف
مجموعة النجاح (100 - 50)	أ - ممتاز	معدل	100 - 90	أداء متميز
	ب - جيد جدا	جيد جدا	89 - 80	فوق المتوسط مع بعض الأخطاء
	ج - جيد	جيد	79 - 70	عمل سليم مع أخطاء ملحوظة
	د - مرضية	متوسط	69 - 60	عادل ولكن مع أوجه قصور كبيرة
	هـ - كافية	مقبول	59 - 50	العمل يفي بالحد الأدنى من المعايير
فشل المجموعة (49 - 0)	FX - فشل	راسب (قيد المعالجة)	(49-45)	مطلوب المزيد من العمل ولكن الائتمان الممنوح
	F - فشل	راسب	(44-0)	كمية كبيرة من العمل المطلوب

ملاحظة: سيتم تقريب العلامات التي تزيد المنازل العشرية عن 0.5 أو تقل عن العلامة الكاملة الأعلى أو الأدنى (على سبيل المثال ، سيتم تقريب علامة 54.5 إلى 55 ، بينما سيتم تقريب علامة 54.4 إلى 54. لدى الجامعة سياسة عدم التفاوضي عن "فشل المرور الوشيك" ، لذا فإن التعديل الوحيد للعلامات الممنوحة بواسطة العلامة (العلامات) الأصلية سيكون التقريب التلقائي الموضح أعلاه.