

# MODULE DESCRIPTION FORM

## نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	Computer fundamentals /1		Module Delivery
Module Type	basic		Theory Lab
Module Code	STU103		
ECTS Credits	3		
SWL (hr/sem)	75		
Module Level	1	Semester of Delivery	
Administering Department	ESTE	College	TTC
Module Leader	Rasheed Hameed M.	e-mail	rasheed.alhmel@stu.edu.iq
Module Leader's Acad. Title	Assistant Professor	Module Leader's Qualification	Ph.D.
Module Tutor		e-mail	E-mail
Peer Reviewer Name	Assistant professor Dr warid sayel warid	e-mail	warid. sayel@stu.edu.iq
Scientific Committee Approval Date	18/06/2023	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><b>Module Objectives</b> أهداف المادة الدراسية</p>	<ol style="list-style-type: none"><li>1. To develop problem-solving skills and an understanding of the computer through the application of techniques</li><li>2. 2- To understand the work of the electronic computer and the possibility of dealing with it</li><li>3. Developing an understanding of the fundamental concepts of computer science, including programming, algorithms, data structures, computer architecture, operating systems, and networks.</li><li>4. Developing practical skills in software development, including programming, debugging, testing, and documentation.</li><li>5. Developing problem-solving skills, including the ability to analyze problems, design solutions, and implement them using appropriate programming languages and tools.</li><li>6. Developing an understanding of the ethical and social issues related to computing, including privacy, security, intellectual property, and the digital divide.</li><li>7. Developing an understanding of the role of computer science in society, including its impact on industry, government, healthcare, and education.</li><li>8. Developing an appreciation for the diversity of applications of computer science, including artificial intelligence, machine learning, robotics, and data science</li></ol>
<p><b>Module Learning Outcomes</b> مخرجات التعلم للمادة الدراسية</p>	<ol style="list-style-type: none"><li>1. Discusses the basic components of a computer system, including hardware, software, and peripherals.</li><li>2. Understand basic computer programming concepts such as variables, loops, and conditionals</li><li>3. It discusses the basics of computer networking, including the different types of networks, network topologies, and network protocols.</li><li>4. Learn about common operating systems, such as Windows, Mac OS, and Linux, including their features, functions, and user interface</li><li>5. Learn to use popular productivity software, including word processing, spreadsheet, and presentation applications</li><li>6. Understand the importance of computer security and privacy, including risks associated with malware, viruses, and phishing</li><li>7. Develop basic troubleshooting skills, including identifying and resolving common hardware and software problems</li><li>8. Learn basic computer terms and concepts, including file management, data storage, and computer ethics</li><li>9. Familiarize learners with basic computer terms and concepts, such as file management, data storage, and computer ethics.</li><li>10. Learners understand different file formats, data storage options, and ethical considerations related to the use of computers and the Internet.</li><li>11. Learners understand how to protect their data and devices, including using antivirus software, firewalls, and strong passwords</li><li>12. Learners have developed skills in creating, editing and formatting documents, spreadsheets and presentations.</li></ol>

## Indicative Contents

المحتويات الإرشادية

### Part A - Computer Basics

- Computer Basics includes, computer life cycle - computer generations - data and information - computer features - areas of use.  
Computer's components(10 hrs)
- The physical parts of the computer - input devices - output devices - computer case  
Software entity - computer setup systems - personal computer features (8 hrs)
- Part review (2hrs)

### Part B-Computer security and software licenses

- Ethics of the electronic world - forms of transgression in the digital world - computer security - computer privacy - computer software licenses - types of licenses - intellectual property - types of electronic penetration (10hrs)
- malicious programs  
Computer viruses - components of the virus - types of viruses - the most common security risk (8hrs)
- Part review (2hrs)

### Part C- Operating Systems

- Definition of operating system - Functions of the operating system - Objectives of the operating system - Classification of operating systems (10hrs)
- Desktop Components - Start Menu - Taskbar - Notification Area - Folders and Files - Desktop Backgrounds - Control Panel – Help (8hrs)
- Part review (2hrs)

## Learning and Teaching Strategies

### استراتيجيات التعلم والتعليم

#### Strategies

1. Start with the basics: Begin by introducing learners to the basic components of a computer system, including hardware, software, and peripherals. Use simple, easy-to-understand language and provide visual aids, such as diagrams and images, to help learners grasp the concepts.
2. Use a hands-on approach: Provide learners with opportunities to practice using computers and software applications. Use interactive activities, such as tutorials, quizzes, and games, to engage learners and reinforce their learning.
3. Provide clear instructions: Ensure that instructions are clear and easy to follow. Break down complex tasks into smaller, manageable steps and provide learners with clear guidance on how to complete each step.
4. Use real-world examples: Use real-world examples to illustrate the relevance and practical applications of computer technology. For example, show learners how to create a resume using word processing software or how to create a budget using a spreadsheet application.

## Student Workload (SWL)

### الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

<b>Structured SSWL (h/sem)</b> الحمل الدراسي المنتظم للطالب خلال الفصل	49	<b>Structured SSWL (h/w)</b> الحمل الدراسي المنتظم للطالب أسبوعيا	3
<b>Unstructured SWL (h/sem)</b> الحمل الدراسي غير المنتظم للطالب خلال الفصل	26	<b>Unstructured SWL (h/w)</b> الحمل الدراسي غير المنتظم للطالب أسبوعيا	1.5
<b>Total SWL (h/sem)</b> الحمل الدراسي الكلي للطالب خلال الفصل	75		

Module Evaluation					
تقييم المادة الدراسية					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	1	5% (5)	7 and 13	LO #2, #3 and #7, #8
	Assignments	1	5% (5)	3 and 10	LO #1, #4 and #5, #6, #9
	Project	1	5% (5)	Continuous	All
	Report	1	10% (10)	1-14	LO #10, #11 and #12
	Lab Reports and Lap Exam	امتحان 1, تقرير 15 عملي	تقارير (10) %0.666 امتحان عملي (5) %5	1-15,8	LO #1- #15, LO #1- #8
Summative assessment	Midterm Exam	1 hr نظري	10% (10)	7	LO #1 - #7
	Final Exam	3 hr 2 hr نظري 1 hr عملي	50% (50) نظري %35 عملي %15	15	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)	
المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Phases of the computer cycle, and its development
Week 2	Electronic computer, data Information and computer features
Week 3	Computer components and types of computers
Week 4	The physical parts of the computer, and the entity software
Week 5	computer setup systems and computer features
Week 6	Factors that must be taken into account when Buying a computer, and the ethics of the world electronic
Week 7	Forms of abuse in the digital world - Computer security and privacy the computer
Week 8	Computer software licenses and types Intellectual property licenses
Week 9	Hack email and its sources
Week 10	Malignant-Types - components
Week 11	Computer risks- Health - psychological - social
Week 12	Operating systems - concept - functions - goals

<b>Week 13</b>	Desktop background, control panel
<b>Week 14</b>	Mouse settings and controls Windows general exercises
<b>Week 15</b>	preparatory week before the final Exam

<b>Delivery Plan (Weekly Lab. Syllabus)</b> المنهاج الاسبوعي للمختبر	
	<b>Material Covered</b>
<b>Week 1</b>	Introduction to Word- Understanding the Word interface- Creating a new document - Saving and opening documents- Basic text editing and formatting
<b>Week 2</b>	Formatting Text- Font type, size, and color- Bold, italic, and underline- Alignment and indentation- Bullets and numbering
<b>Week 3</b>	Page Layout- Margins and orientation- Page size and breaks- Headers and footers - Page numbering
<b>Week 4</b>	Styles and Themes- Creating and modifying styles- Applying themes- Saving and sharing styles and themes
<b>Week 5</b>	Tables- Creating tables- Formatting tables- Merging and splitting cells- Calculating in tables
<b>Week 6</b>	Images and Graphics- Inserting images and graphics- Resizing and cropping images- Adding captions and alt text- Working with shapes and text boxes
<b>Week 7</b>	Document Collaboration- Sharing documents- Tracking changes- Reviewing and accepting changes- Adding comments
<b>Week 8</b>	Mail Merge- Creating a data source- Creating a mail merge document- Previewing and finishing the merge
<b>Week 9</b>	Templates- Using built-in templates- Creating custom templates- Saving and sharing templates - Applying templates
<b>Week 10</b>	Working with Long Documents- Using headings and subheadings- Creating a table of contents - Adding footnotes and endnotes- Creating an index
<b>Week 11</b>	Advanced Formatting- Using styles for formatting- Formatting page numbers and section breaks - Working with columns and breaks- Using line and page breaks
<b>Week 12</b>	Advanced Editing- Using find and replace- Using the thesaurus and dictionary- Creating and modifying autocorrect entries- Using the Clipboard and Smart Cut and Paste

<b>Week 13</b>	Macros and Automation- Recording and running macros- Customizing the Quick Access Toolbar and Ribbon- Using keyboard shortcuts- Automating tasks with Visual Basic for Applications (VBA)
<b>Week 14</b>	Advanced Topics- Creating and editing forms- Protecting documents with passwords and permissions- Using macros to automate tasks- Customizing Word options and settings

### Learning and Teaching Resources

#### مصادر التعلم والتدريس

	Text	Available in the Library?
<b>Required Texts</b>	William Stallings, ( 2003 ), Computer Organization & Architecture, Sixth edition, Preson Education	Yes
<b>Recommended Texts</b>	Computer Science Illuminated" by Nell Dale and John Lewis	No
<b>Websites</b>	1. GCF Global - Computer Basics: <a href="https://edu.gcfglobal.org/en/computerbasics/">https://edu.gcfglobal.org/en/computerbasics/</a> 2. Digital Unite - Computer Basics: <a href="https://digitalunite.com/technology-guides/computer-basics">https://digitalunite.com/technology-guides/computer-basics</a>	

### Grading Scheme

#### مخطط الدرجات

Group	Grade	التقدير	Marks %	Definition
<b>Success Group (50 - 100)</b>	<b>A</b> - Excellent	امتياز	90 - 100	Outstanding Performance
	<b>B</b> - Very Good	جيد جدا	80 - 89	Above average with some errors
	<b>C</b> –Good	جيد	70 - 79	Sound work with notable errors
	<b>D</b> - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	<b>E</b> - Sufficient	مقبول	50 - 59	Work meets minimum criteria
<b>Fail Group (0 – 49)</b>	<b>FX</b> – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	<b>F</b> – 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	Electronic Physics		Module Delivery
Module Type	Core		Theory Lecture Lab
Module Code	STUTTC121		
ECTS Credits	9		
SWL (hr/sem)	225		
Module Level	1	Semester of Delivery	
Administering Department	ESTE	College	TTC
Module Leader	Yaseen Ali Sahood	e-mail	Yaseen.sahood@stu.edu.iq
Module Leader's Acad. Title	Professor	Module Leader's Qualification	Ph.D.
Module Tutor	Name (if available)	e-mail	E-mail
Peer Reviewer Name	warid sayel warid	e-mail	warid.sayel@stu.edu.iq
Scientific Committee Approval Date	18/06/2023	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 Objectives

أهداف المادة الدراسية

1. To understand the fundamentals of structure of the atom, orbitals in the atom, energy levels connectivity, semiconductors.
2. To have knowledge about the physics of semiconductor materials.
3. To understand the characteristics and theories in semiconductor materials in terms of crystal structures, charge carriers and energy bands.
4. To describe crystalline structures of semiconductors. describe band structures of semiconductors.
5. To explain the properties of n-type and p-type semiconductors.

**Module Learning  
Outcomes**

مخرجات التعلم للمادة الدراسية

- 1- Understand the structure of the atom, orbitals in the atom, energy levels. To understand contributory, conductivity, semiconductors.
- 2- Understand doping, equivalence , diffraction and diffusion , conductors, insulators and semiconductors, connectivity.
- 3- Understand the structure of PN junction:, the properties of the junction, the operation of diodes in electrical circuits.
- 4- Learn junction applications like zener diode, half wave rectifier and full wave rectifier filters.
- 5- Understand the transistor specifications.
- 6- Recognize saturation and cutoff in the transistor.
- 7- Understand the operation of transistor as a switch.
- 8- Understand the operation of transistor as an amplifier.
- 9- Understand the operation of FET transistor.
- 10-Understand the operation of JFET transistor and JFET Properties.
- 11-Understand the circuit analysis of JFET.
- 12-Understand the properties and circuit analysis of MOS-FET transistor.
- 13-Understand the operation of FET transistor as an amplifier.
- 14-Understand the operation of FET transistor as switch.

<b>Indicative Contents</b> المحتويات الإرشادية	semiconductors: - structure of the atom, orbitals in the atom, - energy levels - Contributory and Contributory Links - Conductivity, semiconductors. [7]  doping, equivalence -Diffraction and diffusion -Conductors, insulators and semiconductors -connectivity. [7]  PN junction: open circuit connection -Bias joint. Pn -The properties of the junction. V-I Diodes in electrical circuits- junction applications- Dual types- Zener diode. Half wave rectifier and full wave rectifier -Filters. [14]  three-way transistor- The controlled source- Triple connection- Transistor specifications- saturation and cutoff in the transistor- transistor as a switch- transistor as an amplifier. [28]  FET transistor- Voltage controlled power source- JFET transistor- JFET properties- Circuit Analysis of JFET- MOS-FET transistor- properties and circuit analysis- FET transistor as an amplifier- FET transistor as a switch. [42]
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<b>Learning and Teaching Strategies</b> استراتيجيات التعلم والتعليم	
<b>Strategies</b>	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering types of simple experiments involving some sampling activities that are interesting to the students.

<b>Student Workload (SWL)</b> الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
<b>Structured SSWL (h/sem)</b> الحمل الدراسي المنتظم للطالب خلال الفصل	109	<b>Structured SSWL (h/w)</b> الحمل الدراسي المنتظم للطالب أسبوعيا	7
<b>Unstructured SWL (h/sem)</b> الحمل الدراسي غير المنتظم للطالب خلال الفصل	116	<b>Unstructured SWL (h/w)</b> الحمل الدراسي غير المنتظم للطالب أسبوعيا	7
<b>Total SWL (h/sem)</b> الحمل الدراسي الكلي للطالب خلال الفصل	225		

## Module Evaluation

### تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	1	5% (5)	5 and 10	LO #1, #2 and #12, #13
	Assignments	1	5% (5)	4 and 8	LO #3 and #6
	Project	1	5% (5)	Continuous	All
	Report	1	10% (10)	13	LO #3, #8 and #9
	Lab Reports and Lap Exam	امتحان 1, تقرير 15 عملي	تقارير (10) 0.666 % امتحان عملي (5) 5%	1-15, 8	LO #1-15, LO #1-8
Summative assessment	Midterm Exam	1 hr نظري	10% (10)	7	LO #1 - #8
	Final Exam	3 hr 2 hr نظري 1 hr عملي	50% (50) نظري ٣٥% عملي ١٥%	15	All
Total assessment			100% (100 Marks)		

## Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	semiconductors: - structure of the atom, orbitals in the atom, - energy levels - Contributory and Contributory Links - Conductivity, semiconductors
Week 2	doping, equivalence -Diffraction and diffusion -Conductors, insulators and semiconductors -Connectivity
Week 3	PN junction: open circuit connection -Bias joint. Pn -The properties of the junction. V-I Diodes in electrical circuits
Week 4	junction applications Dual types. Zener diode. Half wave rectifier and full wave rectifier Filters
Week 5	three-way transistor The controlled source Triple connection. Transistor specifications
Week 6	saturation and cutoff in the transistor
Week 7	transistor as a switch
Week 8	transistor as an amplifier
Week 9	FET transistor Voltage controlled power source
Week 10	JFET transistor JFET Properties
Week 11	JFET circuit analysis
Week 12	MOS-FET transistor Properties and circuit analysis
Week 13	FET transistor as an amplifier
Week 14	FET transistor as a switch
Week 15	Application examples

## Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Characteristics Diode
Week 2	Half wave rectifier
Week 3	Full wave rectifier
Week 4	Clipper Circuit
Week 5	Clamper Circuit
Week 6	Voltage Multipliers
Week 7	Other Diode applications ( AND circuit)
Week 8	Other Diode applications ( OR circuit)
Week 9	Zener Diode characteristics
Week 10	Zener regulator
Week 11	BJT characteristics
Week 12	FET characteristics

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	Electronics for Physicists: An Introduction (Undergraduate Lecture Notes in Physics) 1st ed. 2020 Edition by Bryan H. Suits	No
Recommended Texts	fundamental of physics by F.Bush	No
Websites	No	

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

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

# MODULE DESCRIPTION FORM

## نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	Engineering and electrical Drawing		Module Delivery
Module Type	core		Theory Lecture Practical
Module Code	STUTTC123		
ECTS Credits	6		
SWL (hr/sem)	150		
Module Level	1	Semester of Delivery	2
Administering Department	ESTE	College	TTC
Module Leader	Karim khazaL egab	e-mail	k.egab@stu.edu.iq
Module Leader's Acad. Title	Assistant Professor	Module Leader's Qualification	Ph.D.
Module Tutor		e-mail	
Peer Reviewer Name	Assistant professor Dr warid sayel warid	e-mail	warid. sayel@stu.edu.iq
Scientific Committee Approval Date	18/06/2023	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

<b>Module Objectives</b> أهداف المادة الدراسية	<ol style="list-style-type: none"><li>1. To understand manual drafting and dimensioning of views</li><li>2. To perform lines drawing, simple sketches and modify dimensions.</li><li>3. This course deals with the basic concept of electrical drawing.</li><li>4. To understand sections and isometrics.</li><li>5. Explains the principles of orthographic views</li><li>6. To understand multi view projection.</li><li>7. To understand sectional view drawing</li></ol>
<b>Module Learning Outcomes</b> مخرجات التعلم للمادة الدراسية	<ol style="list-style-type: none"><li>1- Recognize drawing paper Specification and Kinds of Lines</li><li>2- Understand the first angle projection and third angle projection</li><li>3- Explain multi view projection and views Distributions.</li><li>4- Drawing of side view and drawing of top view .</li><li>5- Dimensioning of Drawing and Full Section</li><li>6- Understand half Section and offset Section</li><li>7- Explain partial section</li><li>8- To understand electrical drawing</li></ol>
<b>Indicative Contents</b> المحتويات الإرشادية	<p>Drawing Paper Specification, Kinds of Lines, First Angle Projection [21 hrs]</p> <p>Third Angle Projection, Multi View Projection, Views Distributions [21 hrs]</p> <p>Drawing of Side View, Drawing of Top View, Dimensioning of Drawing, Full Section, Half Section, Offset Section [21 hrs]</p> <p>Partial Section, Pictorial Drawing, Isometric Drawing [21 hrs]</p> <p>Electrical Drawing , Electrical Symbols, Electronic Symbols [21 hrs]</p>

## Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

<b>Strategies</b>	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering types of simple experiments involving some sampling activities that are interesting to the students.
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<b>Student Workload (SWL)</b> الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
<b>Structured SSWL (h/sem)</b> الحمل الدراسي المنتظم للطالب خلال الفصل	110	<b>Structured SSWL (h/w)</b> الحمل الدراسي المنتظم للطالب أسبوعيا	7
<b>Unstructured SWL (h/sem)</b> الحمل الدراسي غير المنتظم للطالب خلال الفصل	40	<b>Unstructured SWL (h/w)</b> الحمل الدراسي غير المنتظم للطالب أسبوعيا	3
<b>Total SWL (h/sem)</b> الحمل الدراسي الكلي للطالب خلال الفصل	150		

<b>Module Evaluation</b> تقييم المادة الدراسية					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
<b>Formative assessment</b>	<b>Quizzes</b>	2	5% (10)	5 and 8	LO #1, #2 and #5, #6
	<b>seminar</b>	1	10% (10)	14	LO #6 and #8
	<b>project</b>	1	10% (10)	13	LO #4
	<b>Assignments</b>	2	5% (10)	4 and 14	LO #3 and #8
<b>Summative assessment</b>	<b>Midterm Exam</b>	2hr	10% (10)	7	LO #1 - #7
	<b>Final Exam</b>	3hr	50% (50)	16	All
<b>Total assessment</b>			100% (100 Marks)		

<b>Delivery Plan (Weekly Syllabus)</b> المنهاج الاسبوعي	
	<b>Material Covered</b>
<b>Week 1</b>	Drawing Paper Specification
<b>Week 2</b>	Kinds of Lines

<b>Week 3</b>	First Angle Projection
<b>Week 4</b>	Third Angle Projection
<b>Week 5</b>	Multi View Projection
<b>Week 6</b>	Views Distributions
<b>Week 7</b>	Drawing of Side View, Drawing of Top View
<b>Week 8</b>	Dimensioning of Drawing, Full Section
<b>Week 9</b>	Half Section, Offset Section
<b>Week 10</b>	Partial Section
<b>Week 11</b>	Pictorial Drawing
<b>Week 12</b>	Isometric Drawing
<b>Week 13</b>	Electrical Drawing
<b>Week 14</b>	Electrical Symbols
<b>Week 15</b>	Electronic Symbols

<b>Learning and Teaching Resources</b> مصادر التعلم والتدريس		
	Text	Available in the Library?
<b>Required Texts</b>	<p>Engineering Drawing . assistant professor Abed Alrassol AL-Khfaf , UOT , 1990</p> <p>Electrical Drawing, J. C. Cluley , 1979</p>	No

<b>Grading Scheme</b> مخطط الدرجات				
Group	Grade	التقدير	Marks %	Definition
<b>Success Group (50 - 100)</b>	<b>A</b> - Excellent	امتياز	90 - 100	Outstanding Performance
	<b>B</b> - Very Good	جيد جدا	80 - 89	Above average with some errors
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	<b>E</b> - Sufficient	مقبول	50 - 59	Work meets minimum criteria
<b>Fail Group (0 – 49)</b>	<b>FX</b> – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	<b>F</b> – 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	Engineering materials		Module Delivery
Module Type	Core		Theory Lecture Lab
Module Code	STUTTC112		
ECTS Credits	9		
SWL (hr/sem)	225		
Module Level	1	Semester of Delivery	
Administering Department	ESTE	College	TTC
Module Leader	Dr. Mohanad Hashim Mousa	e-mail	mohanad.mousa@stu.edu.iq
Module Leader's Acad. Title	lecturer	Module Leader's Qualification	Ph.D.
Module Tutor	Name (if available)	e-mail	E-mail
Peer Reviewer Name	Dr. Karim Khazal Egab	e-mail	E-mail: K.egab@stu.edu.iq
Scientific Committee Approval Date	18/06/2023	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

<b>Module Objectives</b> أهداف المادة الدراسية	<ol style="list-style-type: none"><li>1. It provides a working knowledge of Material Science.</li><li>2. Illustration and discussion the principles of Material structure-selection and description.</li><li>3. To select a material for a given use based on considerations of cost and performance.</li><li>4. To be able to create a new material that will have some desirable properties.</li><li>5. To understand the limits of materials and the change of their properties with use.</li></ol>
<b>Module Learning Outcomes</b> مخرجات التعلم للمادة الدراسية	<ol style="list-style-type: none"><li>1. An understanding of Dimensions and units of measurement.</li><li>2. List the various terms associated with Engineering Materials .</li><li>3. Summarize what is meant by a basic of materials selection.</li><li>4. Discuss the structure, properties and application on of different materials.</li><li>5. Describe atoms bonding.</li><li>6. Define Crystal Structure.</li><li>7. Identify the principle of solidification.</li><li>8. Discuss the various properties of semiconductors..</li><li>9. Identify the properties of composite materials.</li></ol>

<p><b>Indicative Contents</b> المحتويات الإرشادية</p>	<p>Indicative content includes the following.</p> <p><u>Part A –various Materials types , structure and behavior Theory</u> Classification of Materials, Advanced materials, Atomic structure, Crystal structure Defects-types of defect-linear defect- Alloy applications- Types of Ceramics. [15 hrs]</p> <p>Ceramics, Types of Ceramics polymers, Polymers types and properties, Semiconductors, Composite materials phase. [15 hrs]</p> <p>diagram -Carbon steel diagram, Heat treatment , Quenching and Tempering. [10 hrs]</p> <p>Mechanical behavior for metals- elastic and plastic deformation, Mechanical behavior of polymers, Mechanical behavior of Ceramics, Mechanical behavior of Composite materials. [15 hrs]</p> <p>Revision problem classes [6 hrs]</p> <p><u>Part B –Properties of materials</u></p> <p>Hardness and other mechanical properties, Physical properties. [15 hrs]</p> <p>Thermal properties, Heat capacity, Thermal expansion, Thermal stresses. [7 hrs]</p> <p>Physical and electrical properties, Electrical conductivity of polymers and Ceramics. Semi conductivity Dielectrical properties [15 hrs]</p>
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<p><b>Learning and Teaching Strategies</b> استراتيجيات التعلم والتعليم</p>	
<p><b>Strategies</b></p>	<p>The key strategy for presenting this module will be to stimulate students' engagement in the tasks while also refining and strengthening their critical thinking abilities. This will be accomplished through courses, interactive tutorials, and the consideration of various sorts of experiments incorporating certain sample activities that are attractive to the students.</p>

Student Workload (SWL)			
الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
<b>Structured SSWL (h/sem)</b> الحمل الدراسي المنتظم للطالب خلال الفصل	109	<b>Structured SSWL (h/w)</b> الحمل الدراسي المنتظم للطالب أسبوعيا	7
<b>Unstructured SWL (h/sem)</b> الحمل الدراسي غير المنتظم للطالب خلال الفصل	116	<b>Unstructured SWL (h/w)</b> الحمل الدراسي غير المنتظم للطالب أسبوعيا	7
<b>Total SWL (h/sem)</b> الحمل الدراسي الكلي للطالب خلال الفصل	225		

Module Evaluation					
تقييم المادة الدراسية					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	1	5% (5)	5 and 10	LO #1, #3 and #4, #5
	Assignments	1	5% (5)	3 and 8	LO #6 and #9
	Projects	1	5% (5)	Continuous	All
	Report	1	10% (10)	1-13	LO #5, #8 and #9
	Lab report and Lab exam	امتحان 1, تقرير 7 عملي	1.428 % (10) تقارير 5% (5) امتحان عملي	1-15,8	LO #1- #9, LO #1- #8
Summative assessment	Midterm Exam	1 hr نظري	10% (10)	7	LO #1 - #7
	Final Exam	3 hr نظري 2 hr نظري 1 hr عملي	50% (50) ٣٥% نظري ١٥% عملي	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)	
المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction - Classification of Materials.
Week 2	Advanced materials – Atomic structure.
Week 3	Atoms bonding- Crystal structure.
Week 4	Defects-types of defect-linear defect-Principle of solidification.
Week 5	Alloy applications- Types of Ceramics.



<b>Week 6</b>	Polymers, Polymers types and properties.
<b>Week 7</b>	Semiconductors, Composite materials.
<b>Week 8</b>	Phase diagram -Carbon steel diagram.
<b>Week 9</b>	Heat treatment.
<b>Week 10</b>	Mechanical behavior for metals- elastic and plastic deformation.
<b>Week 11</b>	Mechanical behavior for Ceramics, Polymers and composite materials.
<b>Week 12</b>	Hardness and other mechanical properties
<b>Week 13</b>	Physical and electrical properties
<b>Week 14</b>	Electrical conductivity of polymers and Ceramics
<b>Week 15</b>	Thermal properties
<b>Week 16</b>	<b>Preparatory week before the final Exam</b>

### Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
<b>Week 1</b>	Lab 1: Introduction to Rockwell Hardness test
<b>Week 2</b>	Lab 2: Brinell Hardness test
<b>Week 3</b>	Lab 3: Vickers Hardness test
<b>Week 4</b>	Lab 4: Sample preparation for Microscopic examination
<b>Week 5</b>	Lab 5: ASTM GRAIN SIZE ANALYSIS
<b>Week 6</b>	Lab 6: Heat Treatment- Quenching and tempering
<b>Week 7</b>	Lab 7: Preparation and study of the Micro Structure of pure metals like Iron, Copper and Aluminum.

### Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
<b>Required Texts</b>	Engineering Materials 1, An introduction to Their Properties and Applications, second edition, M. F. Ashby and D. R. H. Jones, Butterworth-Heinemann, Woburn, UK, 1996.	NO
<b>Recommended Texts</b>	Materials Science and Engineering – An introduction, sixth edition, John Wiley & Sons, Inc. 2004.	No
<b>Websites</b>	<a href="https://ftp.idu.ac.id/wp-content/uploads/ebook/tdg/TEKNOLOGI%20REKAYASA%20MATERIAL%20PERTAHANAN/Materials%20Science%20and%20Engineering%20An%20Introduction%20by%20William%20D.%20Callister,%20Jr.,%20David%20G.%20Rethwisch%20(z-lib.org).pdf">https://ftp.idu.ac.id/wp-content/uploads/ebook/tdg/TEKNOLOGI%20REKAYASA%20MATERIAL%20PERTAHANAN/Materials%20Science%20and%20Engineering%20An%20Introduction%20by%20William%20D.%20Callister,%20Jr.,%20David%20G.%20Rethwisch%20(z-lib.org).pdf</a>	

## 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	English language/1		Module Delivery
Module Type	Supportive		Theory
Module Code	STU101		
ECTS Credits	2		
SWL (hr/sem)	٥٠		
Module Level	1	Semester of Delivery	
Administering Department	ESTE	College	TTC
Module Leader	Warid sayel warid	e-mail	warid.sayel@stu.edu.iq
Module Leader's Acad. Title	Assistant Professor	Module Leader's Qualification	Ph.D.
Module Tutor	Name (if available)	e-mail	E-mail
Peer Reviewer Name	Assistant Profosser Dr Karim egab	e-mail	k.egab@stu.edu.iq
Scientific Committee Approval Date	18/06/2023	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

<b>Module Objectives</b> أهداف المادة الدراسية	<ol style="list-style-type: none"><li>1. Develop students skills in understanding the basic grammars of English.</li><li>2. Develop students' speaking skills in English.</li><li>3. Develop students' listening skills in English.</li><li>4. Develop students' reading skills in English.</li><li>5. Develop students' reading skills in English.</li></ol>
<b>Module Learning Outcomes</b> مخرجات التعلم للمادة الدراسية	<ol style="list-style-type: none"><li>1. Understand the rule of present simple, numbers as Vocabulary</li><li>2. Understand the usage of am / are / is, cities and countries as Vocabulary.</li><li>3. Understand the grammars of personal information, social expressions as Vocabulary .</li><li>4. Understand the grammars of possessives, word groups as Vocubular .</li><li>5. Understand the grammars of present simple, Countries and nationalities as Vocabulary.</li><li>6. Understand the grammars of present simple, Your day as Vocabulary.</li><li>7. Understand the grammars of Question words, Verb patterns 1, Adjectives as Vocabulary.</li><li>8. Understand the grammars of There is / are, places and things as Vocabulary.</li><li>9. Understand the grammars of Simple irregular, was/were, have, do, go as Vocabulary.</li><li>10. Understand the grammars of past simple, work, sports, and leisure as Vocabulary.</li><li>11. Understand the grammars of can / can't, requests, verbs as Vocabulary.</li><li>12. Understand the grammars of like / would like, some / any, in a restaurant as Vocabulary.</li><li>13. Understand the grammars of present continuous, opposite verbs as Vocabulary.</li><li>14. Understand the grammars of future plans, present continuous for future, transport and travel as Vocabulary.</li></ol>

<p><b>Indicative Contents</b> المحتويات الإرشادية</p>	<p>Indicative content includes the following.</p> <p>The grammars of present simple, am / are / is, personal information. Numbers, cities and countries, social expressions as Vocabulary. [12].</p> <p>The grammars of possessives, present simple. Word groups, Countries and nationalities, your day as Vocabulary. [12].</p> <p>The grammars of Question words, There is / are, Simple irregular, was/were . Verb patterns 1, <u>a</u>djectives, places and things, have, do, go as Vocabulary. [12].</p> <p>The grammars of past simple, can / can't, like / would like, some / any. Work, sports, and leisure, verbs, in a restaurant as Vocabulary. [12].</p> <p>The grammars of present continuous, future plans, present continuous for future. Opposite verbs, transport and travel as Vocabulary. [8].</p>
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### Learning and Teaching Strategies

#### استراتيجيات التعلم والتعليم

<p><b>Strategies</b></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 types of simple experiments involving some sampling activities that are interesting to the students.</p>
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### Student Workload (SWL)

#### الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

<p><b>Structured SSWL (h/sem)</b> الحمل الدراسي المنتظم للطالب خلال الفصل</p>	34	<p><b>Structured SSWL (h/w)</b> الحمل الدراسي المنتظم للطالب أسبوعيا</p>	2
<p><b>Unstructured SWL (h/sem)</b> الحمل الدراسي غير المنتظم للطالب خلال الفصل</p>	16	<p><b>Unstructured SWL (h/w)</b> الحمل الدراسي غير المنتظم للطالب أسبوعيا</p>	1
<p><b>Total SWL (h/sem)</b> الحمل الدراسي الكلي للطالب خلال الفصل</p>	<b>50</b>		

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

Delivery Plan (Weekly Syllabus)	
المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Unit one : At a party Grammar: Present Simple Vocabulary: Numbers
Week 2	Unit two : Going sightseeing Grammar: am / are / is Vocabulary: Cities and countries
Week 3	Unit three: In a cafe Grammar: Personal information Vocabulary: Social expressions
Week 4	Unit four : In a chemist's Grammar: Possessives Vocabulary: Word groups
Week 5	Unit Five : In a post office Grammar: present simple Vocabulary: Countries and nationalities
Week 6	Unit six : In a railway station Grammar: present simple Vocabulary: Your day
Week 7	Unit seven : On the phone Grammar: Question words, Verb patterns 1 Vocabulary: Adjectives
Week 8	Unit eight : Personal questions Grammar: Questions and answers, There is / are Vocabulary: Places and things

<b>Week 9</b>	Unit nine : What's the matter? Grammar: Past Simple irregular, was/were Vocabulary: have, do, go
<b>Week 10</b>	Unit ten: What's the problem? Grammar: Past Simple 1 Vocabulary: Work, sports, and leisure
<b>Week 11</b>	Unit eleven: Grammar: can / can't, Requests Vocabulary: Verbs
<b>Week 12</b>	Unit twelve: Grammar: like / would like, some / any Vocabulary: In a restaurant
<b>Week 13</b>	Unit thirteen: Grammar: Present Continuous Vocabulary: Opposite verbs
<b>Week 14</b>	Unit fourteen: Grammar: Future plans, Present Continuous for future Vocabulary: Transport and travel
<b>Week 15</b>	assessment

### Learning and Teaching Resources

#### مصادر التعلم والتدريس

	Text	Available in the Library?
<b>Required Texts</b>	New headway, Liz and John Soars, OXFORD	No
<b>Recommended Texts</b>	English Grammar in Use, 5th Edition by Raymond Murphy.	No
<b>Websites</b>	<a href="https://elt.oup.com/student/headway/beg/?cc=global&amp;selLanguage=en">https://elt.oup.com/student/headway/beg/?cc=global&amp;selLanguage=en</a>	

### Grading Scheme

#### مخطط الدرجات

Group	Grade	التقدير	Marks %	Definition
<b>Success Group (50 - 100)</b>	<b>A</b> - Excellent	امتياز	90 - 100	Outstanding Performance
	<b>B</b> - Very Good	جيد جدا	80 - 89	Above average with some errors
	<b>C</b> - Good	جيد	70 - 79	Sound work with notable errors
	<b>D</b> - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	<b>E</b> - Sufficient	مقبول	50 - 59	Work meets minimum criteria
<b>Fail Group (0 - 49)</b>	<b>FX</b> – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	<b>F</b> – 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	Fundamentals of Electrical Engineering		Module Delivery
Module Type	Core		Theory Lecture Lab Tutorial
Module Code	STUTTC111		
ECTS Credits	9		
SWL (hr/sem)	225		
Module Level	1	Semester of Delivery	
Administering Department	ESTE	College	TTC
Module Leader	Baqer Turki attuai	e-mail	dr.baqer_turki@stu.edu.iq
Module Leader's Acad. Title	Assist Lect	Module Leader's Qualification	M.SC.
Module Tutor	Name (if available)	e-mail	E-mail
Peer Reviewer Name	Assistant Professor Dr. Warid Sayel Warid	e-mail	Warid.sayel@stu.edu.iq
Scientific Committee Approval Date	18/06/2023	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 Objectives

أهداف المادة الدراسية

1. Learn the fundamentals and principles of electrical engineering.
2. Knowledge of electric circuit elements.
3. Analysis of electric circuits.
4. Electrical circuits theorems.
5. Calculations of currents, voltages and electrical power for DC and AC circuits
6. Analysis of resonance in AC circuits (Series and parallel resonance)
7. Analysis of Electromagnetic circuits

**Module Learning  
Outcomes**

مخرجات التعلم للمادة الدراسية

1. Able to Recognize the Basic concepts of electrical circuits, elements and values. Understand Ohm's Law and Power , Efficiency , Energy definitions
2. Able to Recognize the resistors in series - voltage sources in series - Kirchhoff's voltage law - battery signal and voltage drop and Understand Voltage divider law internal resistance voltage sources voltage regulation
3. Able to Recognize the Parallel circuits: resistors in parallel - parallel networks - Kirchhoff's current law - bypass law - open circuits and short circuits. Understand series-parallel circuits, series-parallel networks.
4. Discuss the Stream sources: converting sources - approved and unaccredited sources and Current sources in series - Current sources in parallel – Limiters.
5. Describe Analysis methods: sub-stream method. Grid current method - node voltage method.
6. Identify the Arch circles. Understand Transform (delta-star) and (star-delta).
7. Discuss the Network theories: superposition theory - Thevenin theory Norton's theory .
8. Able to Recognize the theory of transfer of greatest ability and Melman's theory
9. Discuss the AC circuits and sinusoidal quantities. Understand Phase relations - average values and effective values - response (resistance - coil and capacitance) to voltage and alternating current - average power and power factor
10. Explain the Complex numbers: representation of complex numbers using the orthogonal system - the polar system - conversion between systems. Understand Arithmetic operations using complex numbers - converting electrical quantities from the system of time indication to the phase system.
11. Identify the AC circuits: Impedance - tolerance - phase diagram - Resistance and capacitance - regression response - inductive yield - capacitive yield - power and power factor. Understand Series AC circuits - impedance and phase diagram -, R-L-C, R-C in series - voltage divider law - frequency response.
12. Explain the Parallel alternating current circuits - tolerance and phase diagram Understand R-L-C, R-C, and R-L circuits in parallel.
13. Able to Recognize the Circuits of inductors and reactive power - capacitor circuits. Understand Power triangle - P, Q, S power factor correction.
14. Able to Recognize the Magnetic circuits: magnetic field, field intensity, magnetic field strength. Understand Permeability coefficient, magnetic force, and hysteresis.
15. Able to Recognize the Magnetic circuits in series and parallel

## Indicative Contents

المحتويات الإرشادية

### Part A -DC Circuit

Basic concepts, introduction to electrical circuits, elements and values of DC circuits, Ohm's Law - Power - Efficiency – Energy  
Series circuit: resistors in series - voltage sources in series - Kirchhoff's voltage law - battery signal and voltage drop  
Voltage divider law internal resistance voltage sources voltage regulation  
Parallel circuits: resistors in parallel - parallel networks - Kirchhoff's current law - bypass law - open circuits and short circuits  
Series-parallel circuits: series-parallel networks, Stream sources: converting sources - approved and unaccredited sources  
Current sources in series - Current sources in parallel - Limiters [36 hr]

DC circuits  
Analysis methods I –sub-stream method  
Grid current method - node voltage method  
Arch circles, Transform (delta-star) and (star-delta). [18hrs]

Network theories: superposition theory - Thevenin theory, Norton's theory, the theory of transfer of greatest ability ,Melman's theory. [36 hr]

### Part B - AC Circuits

AC Circuits II - AC circuits and sinusoidal quantities  
Phase relations - average values, effective values - response (resistance - coil and capacitance) to voltage, alternating current - average power and power factor. [18hrs]

Complex numbers: representation of complex numbers using the orthogonal system - the polar system - conversion between systems  
Arithmetic operations using complex numbers - converting electrical quantities from the system of time indication to the phase system. [18hrs]

AC circuits: Impedance - tolerance - phase diagram - Resistance and capacitance - regression response - inductive yield - capacitive yield - power and power factor  
Series AC circuits - impedance and phase diagram -, R-L-C, R-C in series - voltage divider law - frequency response  
Parallel alternating current circuits – tolerance, and phase diagram  
R-L-C, R-C, and R-L circuits in parallel. [18 hr]

Current bypass law - series circuits - alternating parallel - series and parallel circuits  
Power in alternating current circuits: resistance circuits - apparent power  
Circuits of inductors and reactive power-capacitor circuits  
Power triangle - P, Q, S power factor correction [18 hr]

Magnetic circuits: magnetic field, field intensity, magnetic field strength  
Permeability coefficient, magnetic force, hysteresis  
Magnetic circuits in series and parallel [18 hr]

## Learning and Teaching Strategies

### استراتيجيات التعلم والتعليم

<b>Strategies</b>	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering types of simple experiments involving some sampling activities that are interesting to the students.
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## Student Workload (SWL)

### الحمل الدراسي للطلاب محسوب لـ ١٥ اسبوعا

<b>Structured SSWL (h/sem)</b> الحمل الدراسي المنتظم للطلاب خلال الفصل	139	<b>Structured SSWL (h/w)</b> الحمل الدراسي المنتظم للطلاب أسبوعيا	9
<b>Unstructured SWL (h/sem)</b> الحمل الدراسي غير المنتظم للطلاب خلال الفصل	86	<b>Unstructured SWL (h/w)</b> الحمل الدراسي غير المنتظم للطلاب أسبوعيا	5
<b>Total SWL (h/sem)</b> الحمل الدراسي الكلي للطلاب خلال الفصل	<b>225</b>		

## Module Evaluation

### تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
<b>Formative assessment</b>	<b>Quizzes</b>	1	5% (5)	5 and 12	LO #1, #3 and # 6, #8
	<b>Assignments</b>	1	5% (5)	8 and 14	LO #4 and #9, #13
	<b>Project</b>	1	5% (5)	Continuous	All
	<b>Report</b>	1	10% (10)	1-13	LO #5, #8 and #10
	<b>Lab Reports and Lap Exam</b>	امتحان 1, تقرير 15 عملي	تقارير (10) %0.666 امتحان عملي (5) %5	1-15,8	LO #1- #15, LO #1- #8
<b>Summative assessment</b>	<b>Midterm Exam</b>	1 hr نظري	10% (10)	8	LO #1 - #7
	<b>Final Exam</b>	3 hr نظري 2 hr نظري 1 hr عملي	50% (50) نظري %٣5 عملي %١5	15	All
<b>Total assessment</b>			100% (100 Marks)		

## Delivery Plan (Weekly Syllabus)

### المنهاج الاسبوعي النظري

	Material Covered
<b>Week 1</b>	Basic concepts and introduction to electrical circuits, elements, and values DC circuits Ohm's Law - Power - Efficiency - Energy
<b>Week 2</b>	Series circuit: resistors in series - voltage sources in series - Kirchoff's voltage law - battery signal and voltage drop Voltage divider law internal resistance voltage sources voltage regulation
<b>Week 3</b>	Parallel circuits: resistors in parallel - parallel networks - Kirchoff's current law - bypass law - open circuits and short circuits Series-parallel circuits: series-parallel networks,
<b>Week 4</b>	Stream sources: converting sources - approved and unaccredited sources, Current sources in series - Current sources in parallel - Limiters
<b>Week 5</b>	Analysis methods: sub-stream method Grid current method - node voltage method
<b>Week 6</b>	Arch circles, Transform (delta-star) and (star-delta).
<b>Week 7</b>	Network theories: superposition theory - Thevenin theory Norton's theory - the theory of transfer of greatest ability
<b>Week 8</b>	Melman's theory ,AC circuits and sinusoidal quantities
<b>Week 9</b>	Phase relations - average values and effective values - response (resistance - coil and capacitance) to voltage and alternating current - average power and power factor Complex numbers: representation of complex numbers using the orthogonal system - the polar system - conversion between systems
<b>Week 10</b>	Arithmetic operations using complex numbers - converting electrical quantities from the system of time indication to the phase system AC circuits: Impedance - tolerance - phase diagram - Resistance and capacitance - regression response - inductive yield - capacitive yield - power and power factor
<b>Week 11</b>	Series AC circuits - impedance and phase diagram -, R-L-C, R-C in series - voltage divider law - frequency response Parallel alternating current circuits - tolerance and phase diagram
<b>Week 12</b>	R-L-C, R-C, and R-L circuits in parallel Current bypass law - series circuits - alternating parallel - series and parallel circuits
<b>Week 13</b>	Power in alternating current circuits: resistance circuits - apparent power Circuits of inductors and reactive power - capacitor circuits
<b>Week 14</b>	Power triangle - P, Q, S power factor correction, Magnetic circuits: magnetic field, field intensity, magnetic field strength
<b>Week 15</b>	Permeability coefficient, magnetic force, hysteresis Magnetic circuits in series and parallel
<b>Week 16</b>	The preparatory week before the Final Exam

## Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Lab 1: Color resistance code
Week 2	Lab 2: Ohm's law
Week 3	Lab 3: Series and Parallel connection
Week 4	Lab 4: Kirchhoff's law
Week 5	Lab 5: Star – Delta connection
Week 6	Lab 6; Super position theorem
Week 7	Lab 7; Thévenin's / Norton's Theorem and Kirchhoff's Laws
Week 8	Lab 8: : Mesh theorem
Week 9	Lab 9: Nodal theorem
Week 10	Lab 10: Impedance element characteristics
Week 11	Lab 11: A.C Maximum transfer
Week 12	Lab 12: RL series circuit
Week 13	Lab 13: RC series circuit, RLC series circuit
Week 14	Lab 14: RL parallel circuit, RC parallel circuit
Week 15	Lab 15: RLC parallel circuit

## Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Fundamentals of Electric Circuits, C.K. Alexander and M.N.O Sadiku, McGraw-Hill Education A Textbook of Electrical Technology Volume I, B.L. THERAJA. A.K. THERAJA, 2005 Introductory Circuit Analysis, Volume 10, Boylestad	NO
Recommended Texts	DC Electrical Circuit Analysis: A Practical Approach Copyright Year: 2020, dissidents.	No
Websites	<a href="https://www.coursera.org/electrical-engineering">https://www.coursera.org/electrical-engineering</a>	

## Grading Scheme

مخطط الدرجات

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

<b>(50 - 100)</b>	<b>B - Very Good</b>	جيد جدا	80 - 89	Above average with some errors
	<b>C - Good</b>	جيد	70 - 79	Sound work with notable errors
	<b>D - Satisfactory</b>	متوسط	60 - 69	Fair but with major shortcomings
	<b>E - Sufficient</b>	مقبول	50 - 59	Work meets minimum criteria
<b>Fail Group (0 – 49)</b>	<b>FX – Fail</b>	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	<b>F – Fail</b>	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		Module Delivery
Module Type	Basic		Theory Lecture Tutorial
Module Code	STUTTC113		
ECTS Credits	7		
SWL (hr/sem)	175		
Module Level	1	Semester of Delivery	
Administering Department	ESTE	College	TTC
Module Leader	Shawqi Glalaf	e-mail	shawki.muhammad@stu.edu.iq
Module Leader's Acad. Title	Professor	Module Leader's Qualification	Ph.D.
Module Tutor	Name (if available)	e-mail	E-mail
Peer Reviewer Name	Assistant professor Dr warid sayel warid	e-mail	warid.sayel@stu.edu.iq
Scientific Committee Approval Date	18/06/2023	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><b>Module Objectives</b> أهداف المادة الدراسية</p>	<ol style="list-style-type: none"><li>1. To develop problem solving skills and understanding of mathematics through the application of techniques.</li><li>2. To understand fundamental functions, differentiation, integration.</li><li>3. This course deals with the basic concepts of differentiation of the functions.</li><li>4. This is the basic subject for all simple function, polynomials, and power, rational functions.</li><li>5. To understand problems like derivatives applications, change rate, draw functions, derivatives of trigonometric functions, natural logarithm and exponential functions, log function and other types of functions.</li><li>6. To develop knowledge and techniques to integrate various types of function and integration application, finding area, volumes, methods of integration.</li></ol>
<p><b>Module Learning Outcomes</b> مخرجات التعلم للمادة الدراسية</p>	<ol style="list-style-type: none"><li>1. Describe elementary functions (e.g. polynomial, power, rational, algebraic, exponential, log, and trigonometric functions) which arise in engineering.</li><li>2. Understanding basic functions, Functions graph, and equation of the straight line, Trigonometric functions and their sketches. Define limits, Polar coordinates (general definition).</li><li>3. Methods of differentiation, Differentiation of basic functions (e.g. polynomial, power, rational, algebraic).</li><li>4. Skills of Some applications of differentiation. Rates of change, Velocity and acceleration, implicit functions.</li><li>5. Derivative of Logarithmic function, exponential, natural logarithmic and special function <math>a^x, x^x</math>.</li><li>6. Differentiation of hyperbolic functions, inverse trigonometric and hyperbolic functions. Discuss the use of derivatives to find the limit L'Hôpital's rule.</li><li>7. Discussion and review of the previous topics.</li><li>8. Define the integration. Integration of basic functions e.g. polynomial, power, rational, algebraic)</li><li>9. Integration of trigonometric and hyperbolic functions.</li><li>10. Applications of definite integration, area and volume.</li><li>11. Integration of other functions, Logarithmic function, exponential, natural logarithmic and special function <math>a^x, x^x</math>, inverse trigonometric and hyperbolic functions.</li><li>12. Methods of integration, integration by parts, substitution sin and cos function, partial fraction.</li><li>13. Methods of integration of special function, of type <math>\sin^n, \cos^n</math>.</li><li>14. Discussion and review of the previous topics.</li></ol>

## Indicative Contents

المحتويات الإرشادية

### Part A – define functions

Functions - Describe elementary functions (e.g. polynomial, power, rational, algebraic, exponential, log, and trigonometric functions) which arise in engineering. Understanding basic functions, Functions graph, and equation of the straight line, Trigonometric functions and their sketches. Define limits, Polar coordinates (general definition). [12hrs]

### Part B – Differentiation functions

Differentiation - Methods of differentiation, Differentiation of basic functions (e.g. polynomial, power, rational, algebraic). Skills of Some applications of differentiation. Rates of change, Velocity and acceleration, implicit functions. Derivative of Logarithmic function, exponential, natural logarithmic and special function  $a^x, x^x$ . Differentiation of hyperbolic functions, inverse trigonometric and hyperbolic functions. Discuss the use of derivatives to find the limit L'Hôpital's rule. Discussion and review of the previous topics. Define the integration. Integration of basic functions e.g. polynomial, power, rational, algebraic). [24hrs]

Revision problems [6 hrs]

### Part B – Integration functions

Define the integration. Integration of basic functions e.g. polynomial, power, rational, algebraic). Integration of trigonometric and hyperbolic functions. Applications of definite integration, area and volume. Integration of other functions, Logarithmic function, exponential, natural logarithmic and special function  $a^x, x^x$ , inverse trigonometric and hyperbolic functions. [24hrs]

Methods of integration, integration by parts, substitution sin and cos function, partial fraction. Methods of integration of special function, of type  $\sin^n, \cos^n$ . [12hrs]

Discussion and review of the problems. [6hrs]

Exam preparing. [6 hrs]

Exam. [4hrs]

## Learning and Teaching Strategies

### استراتيجيات التعلم والتعليم

<b>Strategies</b>	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering types of simple experiments involving some sampling activities that are interesting to the students.
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## Student Workload (SWL)

### الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

<b>Structured SSWL (h/sem)</b> الحمل الدراسي المنتظم للطالب خلال الفصل	94	<b>Structured SSWL (h/w)</b> الحمل الدراسي المنتظم للطالب أسبوعيا	6
<b>Unstructured SWL (h/sem)</b> الحمل الدراسي غير المنتظم للطالب خلال الفصل	81	<b>Unstructured SWL (h/w)</b> الحمل الدراسي غير المنتظم للطالب أسبوعيا	5
<b>Total SWL (h/sem)</b> الحمل الدراسي الكلي للطالب خلال الفصل	<b>150</b>		

## Module Evaluation

### تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
<b>Formative assessment</b>	<b>Quizzes</b>	2	5% (10)	5 and 10	LO #1, #3 and #8, #9
	<b>Assignments</b>	2	5% (10)	6 and 13	LO #5 and #7, #12
	<b>Report</b>	1	10% (10)	1-13	LO #5, #8 and #10
	<b>seminars</b>	1	10% (10)	1-13	LO #3, #4 and #8
<b>Summative assessment</b>	<b>Midterm Exam</b>	1 hr	10% (10)	7	LO #1 - #7
	<b>Final Exam</b>	3 hr	50% (50)	15	All
<b>Total assessment</b>			100% (100 Marks)		

<b>Delivery Plan (Weekly Syllabus)</b> المنهاج الاسبوعي النظري	
	<b>Material Covered</b>
<b>Week 1</b>	Describe elementary functions (e.g. polynomial, power, rational, algebraic, exponential, log, and trigonometric functions) which arise in engineering.
<b>Week 2</b>	Understanding basic functions, Functions graph, and equation of the straight line, Trigonometric functions and their sketches. Define limits, Polar coordinates (general definition).
<b>Week 3</b>	Methods of differentiation, Differentiation of basic functions (e.g. polynomial, power, rational, algebraic)
<b>Week 4</b>	Skills of Some applications of differentiation. Rates of change, Velocity and acceleration, implicit functions.
<b>Week 5</b>	Derivative of Logarithmic function, exponential, natural logarithmic and special function $a^x, x^x$ .
<b>Week 6</b>	Differentiation of hyperbolic functions, inverse trigonometric and hyperbolic functions. Discuss the use of derivatives to find the limit L'Hôpital's rule.
<b>Week 7</b>	Mid-term Exam
<b>Week 8</b>	Discussion and review of the previous topics.
<b>Week 9</b>	Define the integration. Integration of basic functions e.g. polynomial, power, rational, algebraic)
<b>Week 10</b>	Integration of trigonometric and hyperbolic functions.
<b>Week 11</b>	Applications of definite integration, area and volume.
<b>Week 12</b>	Integration of other functions, Logarithmic function, exponential, natural logarithmic and special function $a^x, x^x$ , inverse trigonometric and hyperbolic functions.
<b>Week 13</b>	Methods of integration, integration by parts, substitution sin and cos function, partial fraction.
<b>Week 14</b>	Methods of integration of special function, of type $\sin^n, \cos^n$ . Discussion and review.
<b>Week 15</b>	Final Exam

<b>Learning and Teaching Resources</b> مصادر التعلم والتدريس		
	<b>Text</b>	<b>Available in the Library?</b>
<b>Required Texts</b>	<b>Theory of advanced mathematics with application by Thomas Calculus.</b>	No
<b>Recommended Texts</b>	<b>Books and Literatures in different kinds of Advanced Mathematics.</b>	No
<b>Websites</b>	<a href="https://www.khanacademy.org/math/calculus-1">https://www.khanacademy.org/math/calculus-1</a>	

## Grading Scheme

### مخطط الدرجات

Group	Grade	التقدير	Marks %	Definition
<b>Success Group (50 - 100)</b>	<b>A</b> - Excellent	امتياز	90 - 100	Outstanding Performance
	<b>B</b> - Very Good	جيد جدا	80 - 89	Above average with some errors
	<b>C</b> - Good	جيد	70 - 79	Sound work with notable errors
	<b>D</b> - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	<b>E</b> - Sufficient	مقبول	50 - 59	Work meets minimum criteria
<b>Fail Group (0 – 49)</b>	<b>FX</b> – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	<b>F</b> – 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	Engineering Mechanics		Module Delivery	
Module Type	Core		Theory Lecture	
Module Code	STUTTC122			
ECTS Credits	7			
SWL (hr/sem)	175			
Module Level	1	Semester of Delivery	2	
Administering Department	ESTE	College	TTC	
Module Leader	Karim khaza; egab		e-mail	k.egab@stu.edu.iq
Module Leader's Acad. Title	Assistant Professor		Module Leader's Qualification	Ph.D.
Module Tutor			e-mail	
Peer Reviewer Name	Dr. Mohanad Hashim Mousa		e-mail	mohanad.mousa@stu.edu.iq
Scientific Committee Approval Date	18/06/2023		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><b>Module Objectives</b> أهداف المادة الدراسية</p>	<ol style="list-style-type: none"> <li>1. To develop problem solving skills and understanding of mechanics theory through the application of techniques.</li> <li>2. To understand force, resultant and vectors from a mechanical devices.</li> <li>3. This course deals with the basic concept of statics and dynamics mechanics.</li> <li>4. This is the basic subject for all mechanics parts.</li> <li>5. To understand force moment, equilibrium, centroid and moment of inertia problems.</li> <li>6. To know about friction problems perform mechanics dynamics analysis.</li> </ol>
<p><b>Module Learning Outcomes</b> مخرجات التعلم للمادة الدراسية</p>	<ol style="list-style-type: none"> <li>1. Recognize how force resultant works in mechanic parts.</li> <li>2. Understand the moment associated with force resultant.</li> <li>3. Explain what is the equilibrium.</li> <li>4. Discuss the centroid and its types in mechanics.</li> <li>5. Describe moment of inertia.</li> <li>6. Define truss concept.</li> <li>7. Identify the basic friction elements and their applications.</li> <li>8. Discuss the different types of loads.</li> <li>9. Discuss the terms of displacement, velocity .</li> <li>10. Explain the two dynamics.</li> <li>11. Identify how to find the dynamics components and analysis.</li> </ol>
<p><b>Indicative Contents</b> المحتويات الإرشادية</p>	<p>Introduction to static. Scalar quantity, vector quantity ,standers units. Tow–Tow–dimensional force systems, rectangular components .Moment, principle of moment ,couple ,couple-force system Resultants .Three-dimensional force system, component forces for three dimensions .couple in three-dimensional force system, couple-force system in three-dimensional force system. Resultant in three –dimensional forces. Equilibrium, free body diagram. Structures ,analysis methods. Types of friction, types friction centroid.[10 hrs]</p> <p>Composite bodies &amp;figures Moment of inertia-composite area. [10 hrs]</p> <p>Introduction to dynamic. Kinematics of particles, rectilinear motion. Velocity, acceleration &amp; motion laws. Plane curvilinear motion (rectangular coordinate (x-y)). Projectile motion. Plane curvilinear motion (normal &amp; tangential coordinates (n-1)). Plane curvilinear motion (polar coordinates (r-<math>\Theta</math>)). [10 hrs]</p> <p>Kinetics of particles, Newton's second law. Rectilinear motion. Curvilinear motion.</p> <p>Kinetics of particles, work power, Efficiency, principle of work &amp; kinetic energy. Impulse &amp; momentum [15 hrs]</p>



## Learning and Teaching Strategies

### استراتيجيات التعلم والتعليم

<b>Strategies</b>	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering types of simple experiments involving some sampling activities that are interesting to the students.
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## Student Workload (SWL)

### الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

<b>Structured SSWL (h/sem)</b> الحمل الدراسي المنتظم للطالب خلال الفصل	94	<b>Structured SSWL (h/w)</b> الحمل الدراسي المنتظم للطالب أسبوعيا	6
<b>Unstructured SWL (h/sem)</b> الحمل الدراسي غير المنتظم للطالب خلال الفصل	81	<b>Unstructured SWL (h/w)</b> الحمل الدراسي غير المنتظم للطالب أسبوعيا	5
<b>Total SWL (h/sem)</b> الحمل الدراسي الكلي للطالب خلال الفصل	175		

## Module Evaluation

### تقييم المادة الدراسية

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

## Delivery Plan (Weekly Syllabus)

### المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction to static. Scalar quantity, vector quantity, standard units. Two– Two-dimensional force systems, rectangular components.
Week 2	Moment, principle of moment
Week 3	couple, couple -force system Resultants.
Week 4	Three-dimensional force system, component forces for three dimensions. couple in three-dimensional force system, couple-force system in three-dimensional force system.
Week 5	Resultant in three –dimensional forces. Equilibrium, free body diagram.
Week 6	Structures, analysis methods.
Week 7	Centroid concept
Week 8	Composite bodies & figures Moment of inertia-composite area.
Week 9	Introduction to friction.
Week 10	Introduction to dynamic. Kinematics of particles, rectilinear motion.
Week 11	Velocity, acceleration & motion laws. Plane curvilinear motion (rectangular coordinate(x-y)). Projectile motion.
Week 12	Plane curvilinear motion(normal & tangential coordinates (n-1)). Plane curvilinear motion(polar coordinates (r- $\theta$ )).
Week 13	Kinetics of particles
Week 14	Newton's second law. Rectilinear motion. Curvilinear motion.
Week 15	Kinetics of particles, work power, Efficiency, principle of work & kinetic energy. Impulse & momentum

## Learning and Teaching Resources

### مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Engineering Mechanics, Volume 1, Statics & Dynamics, Fifth Edition by J. L. Meriam & L. G. Kraige	No
Recommended Texts		
Websites		

## Grading Scheme

### مخطط الدرجات

Group	Grade	التقدير	Marks %	Definition
<b>Success Group (50 - 100)</b>	<b>A</b> - Excellent	امتياز	90 - 100	Outstanding Performance
	<b>B</b> - Very Good	جيد جدا	80 - 89	Above average with some errors
	<b>C</b> - Good	جيد	70 - 79	Sound work with notable errors
	<b>D</b> - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	<b>E</b> - Sufficient	مقبول	50 - 59	Work meets minimum criteria
<b>Fail Group (0 – 49)</b>	<b>FX</b> – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	<b>F</b> – 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	حقوق الانسان والديمقراطية		Module Delivery
Module Type	basic		Theory Lecture
Module Code	STU102		
ECTS Credits	2		
SWL (hr/sem)	50		
Module Level	1	Semester of Delivery	1
Administering Department	ESTE	College	TTC
Module Leader	Name	e-mail	E-mail
Module Leader's Acad. Title		Module Leader's Qualification	
Module Tutor	Name (if available)	e-mail	E-mail
Peer Reviewer Name	Name	e-mail	E-mail
Scientific Committee Approval Date	18/06/2023	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

<b>Module Objectives</b> أهداف المادة الدراسية	<p>١- المعرفة بحقوق الإنسان.</p> <p>٢- تعرف على حقوق الإنسان الطبيعية والمحمية التي توفرها الحكومات والمجتمع الدولي للناس.</p> <p>٣- الهدف من هذه الوحدة الدراسية هو تعريف الطلاب على ماهية الحق ، وما هي حقوقهم الطبيعية ، وما هي حقوقهم السياسية.</p>
<b>Module Learning Outcomes</b> مخرجات التعلم للمادة الدراسية	<p>١- اعرف ما هو الحق.</p> <p>٢- معرفة الحقوق الطبيعية.</p> <p>٣- أن يكون الطالب قادراً على التعرف على حقوق الإنسان والحماية التي تمنحها لها الدساتير.</p> <p>٤- معرفة الحقوق السياسية.</p> <p>٥- معرفة دور المنظمات الدولية.</p> <p>٦- معرفة اسس حقوق الانسان في القانون الدولي.</p> <p>٧- معرفة الاعتراف الدولي بحقوق الانسان.</p> <p>٨- معرفة الحقوق المدنية.</p> <p>٩- معرفة حق المساواة امام القانون.</p> <p>١٠- معرفة مفهوم الحرية وانواعها</p> <p>١١- معرفة الانتخابات كمبدأ من مبادئ حقوق الانسان.</p> <p>١٢- تأثير ظاهرة الفساد الاداري على حقوق الانسان والمجتمع.</p>

<b>Indicative Contents</b> المحتويات الإرشادية	<p>طبيعة الحق وماهية حقوق الانسان- مفهوم حقوق الانسان - خصائص حقوق الانسان في الاديان - مميزات القانون الطبيعي - الحقوق الطبيعية [9]</p> <p>اهمية حقوق الانسان واسسها - حقوق الانسان في الاديان - حقوق الانسان في الشريعة الاسلاميه : في القرآن الكريم . في السنة النبوية الشريفة - ارتباط الواجبات بالحقوق في الشريعة الاسلامية [9]</p> <p>اسس حقوق الانسان في القانون الدولي - مصادرة- الحق الطبيعي - الدين - العرف العاده -الحقوق اللصيقه الكائن الطبيعي - الاعتراف الدولي بحقوق الانسان - الاعتراف الاقليمي بحقوق الانسان - المنظمات غير الحكومية ودورها في الدفاع عن حقوق الانسان [9]</p> <p>الحقوق المدنية - حق الحياة والحرية وحق الحرية الشخصية - حق التملك - حق التعاقد -حق حرية الاعتقاد حرية الضمير - حق تاسيس الجمعيات والاشترك فيها -حق تكوين العائلة - حق المساواة امام القانون - ضمانات الحقوق المدنية حقوق الدين - حقوق الابناء - حقوق النساء - حقوق الجوار [9]</p> <p>مفهوم الحرية وانواعها - قيود الحرية - الانتخابات كمبدأ من مبادئ حقوق الانسان -تأثير ظاهرة الفساد الاداري على حقوق الانسان والمجتمع [9]</p>
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<b>Learning and Teaching Strategies</b> استراتيجيات التعلم والتعليم	
<b>Strategies</b>	<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 types of simple experiments involving some sampling activities that are interesting to the students.</p>

<b>Student Workload (SWL)</b> الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
<b>Structured SSWL (h/sem)</b> الحمل الدراسي المنتظم للطالب خلال الفصل	33	<b>Structured SSWL (h/w)</b> الحمل الدراسي المنتظم للطالب أسبوعيا	2
<b>Unstructured SWL (h/sem)</b> الحمل الدراسي غير المنتظم للطالب خلال الفصل	17	<b>Unstructured SWL (h/w)</b> الحمل الدراسي غير المنتظم للطالب أسبوعيا	1
<b>Total SWL (h/sem)</b> الحمل الدراسي الكلي للطالب خلال الفصل	50		

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

Delivery Plan (Weekly Syllabus)	
المنهاج الاسبوعي النظري	
	Material Covered
Week 1	طبيعة الحق وماهية حقوق الانسان
Week 2	مفهوم حقوق الانسان - خصائص حقوق الانسان في الاديان
Week 3	مميزات القانون الطبيعي - الحقوق الطبيعية
Week 4	اهمية حقوق الانسان واسسها - حقوق الانسان في الاديان
Week 5	حقوق الانسان في الشريعة الاسلاميه : في القرآن الكريم . في السنة النبوية الشريفة
Week 6	ارتباط الواجبات بالحقوق في الشريعة الاسلامية
Week 7	اسس حقوق الانسان في القانون الدولي - مصادرة- الحق الطبيعي - الدين
Week 8	العرف العاده -الحقوق للصيقة الكائن الطبيعي
Week 9	الاعتراف الدولي بحقوق الانسان - الاعتراف الاقليمي بحقوق الانسان - المنظمات غير الحكومية ودورها في الدفاع عن حقوق الانسان
Week 10	الحقوق المدنية - حق الحياة والحرية وحق الحرية الشخصية - حق التملك - حق التعاقد - حق حرية الاعتقاد حرية الضمير
Week 11	حق تاسيس الجمعيات والاشترك فيها - حق تكوين العائلة - حق المساواة امام القانون - ضمانات الحقوق المدنية
Week 12	حقوق الدين - حقوق الابناء - حقوق النساء - حقوق الجوار
Week 13	مفهوم الحرية وانواعها - قيود الحرية
Week 14	الانتخابات كمبدأ من مبادئ حقوق الانسان
Week 15	تأثير ظاهرة الفساد الاداري على حقوق الانسان والمجتمع

## Learning and Teaching Resources

### مصادر التعلم والتدريس

	Text	Available in the Library?
<b>Required Texts</b>	حقوق الانسان . حافظ علوان حمادي . جامعة بغداد كلية العلوم السياسية . ٢٠٠٩	No

## Grading Scheme

### مخطط الدرجات

Group	Grade	التقدير	Marks %	Definition
<b>Success Group (50 - 100)</b>	<b>A</b> - Excellent	امتياز	90 - 100	Outstanding Performance
	<b>B</b> - Very Good	جيد جدا	80 - 89	Above average with some errors
	<b>C</b> - Good	جيد	70 - 79	Sound work with notable errors
	<b>D</b> - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	<b>E</b> - Sufficient	مقبول	50 - 59	Work meets minimum criteria
<b>Fail Group (0 – 49)</b>	<b>FX</b> – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	<b>F</b> – 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	Workshops		Module Delivery	
Module Type	basic		Practical	
Module Code	STUTTC125			
ECTS Credits	6			
SWL (hr/sem)	150			
Module Level	1	Semester of Delivery		2
Administering Department	ESTE	College	TTC	
Module Leader	Yaseen Ali Sahood		e-mail	Yaseen.sahood@stu.edu.iq
Module Leader's Acad. Title	Assist Lect		Module Leader's Qualification	M.SC.
Module Tutor	Name (if available)		e-mail	E-mail
Peer Reviewer Name	Assistant Professor Dr. warid sayel warid		e-mail	Warid.sayel@stu.edu.iq
Scientific Committee Approval Date	18/06/2023	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><b>Module Objectives</b> أهداف المادة الدراسية</p>	<ol style="list-style-type: none"><li>1. Enable the student to know and understand the theoretical and practical principles of the plumbing workshop.</li><li>2. Enable the student to know and understand the theoretical and practical principles of the electrical workshop.</li><li>3. Enable the student to know and understand the theoretical and practical principles of the blacksmithing workshop.</li><li>4. Enable the student to know and understand the theoretical and practical principles of the turning workshop.</li><li>5. Enable the student to know and understand the theoretical and practical principles of the automobile workshop.</li><li>6. Design of various models and Manufacture of some simple products.</li></ol>
<p><b>Module Learning Outcomes</b> مخرجات التعلم للمادة الدراسية</p>	<ol style="list-style-type: none"><li>1. Understand the types of fillings</li><li>2. Understand the types of blacksmithing.</li><li>3. Understand the types of Turning.</li><li>4. Understand the types of Welding.</li><li>5. Understand about plumbing.</li><li>6. Understand about electricity.</li></ol>

<p style="text-align: center;"><b>Indicative Contents</b> المحتويات الإرشادية</p>	<p>Indicative content includes the following.</p> <p><u>Part A -Tools</u> Include recognition of different tools. Employed for surface preparation and methods of application correctly, Devices of measuring dimensions, Calipers, types and uses, drill types and dimensions.[12hrs]</p> <p>Measuring toolsSteel miler, Veneer, Micrometer, Height &amp; height gauge hand tools, Saws, Hammers, Files, Scriber, Chisels, Taps and dies, Surface plate, Bench working. [18 hrs]</p> <p><u>Part B – filings</u> The coolant used for wood, the coolant used for iron, the cutting edge, and the means of joining work pieces How to process refrigerators and their types, taking care of the refrigerator when using it, the proper use of refrigerators and methods of maintaining them[12hrs]</p> <p><u>Part C- blacksmithing</u> Saw, drill, welding machine, cutting rocket, concrete shot gun[12 hrs]</p> <p><u>Part D-LathingWorkshop</u> lathe machine – Parts – Operation - Practice on longitudinal lathing – Making center – Puncturing – Making external teeth – Practice - Employing measuring tools – internal &amp; external lath machining.[12 hrs]</p> <p><u>Part E–WeldingWorkshop</u> Include recognition of tools and materials employed – A gas cylinder of oxy – Acetylene welding of surface – Electrical welding exercise – Welding spot.[12hrs]</p> <p><u>Part F–plumbing</u> Characteristics of the casting process, casting defects, sand casting, sand casting steps, preparation and shaping, the necessary processes for sand casting, other casting methods, casting in permanent molds under pressure, lost wax casting (melted)[12hrs]</p> <p><u>Part G – electricity</u> Electrical insulation, insulation materials, winding methods, some practical examples, electrical contacts, diagrams, some practical examples [12hrs]</p>
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## Learning and Teaching Strategies

### استراتيجيات التعلم والتعليم

<b>Strategies</b>	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering types of simple experiments involving some sampling activities that are interesting to the students.
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## Student Workload (SWL)

### الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

<b>Structured SSWL (h/sem)</b> الحمل الدراسي المنتظم للطالب خلال الفصل	94	<b>Structured SSWL (h/w)</b> الحمل الدراسي المنتظم للطالب أسبوعيا	6
<b>Unstructured SWL (h/sem)</b> الحمل الدراسي غير المنتظم للطالب خلال الفصل	56	<b>Unstructured SWL (h/w)</b> الحمل الدراسي غير المنتظم للطالب أسبوعيا	4
<b>Total SWL (h/sem)</b> الحمل الدراسي الكلي للطالب خلال الفصل	<b>150</b>		

## Module Evaluation

### تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
<b>Formative assessment</b>	<b>Quizzes</b>	2	5% (10)	٨ and 12	LO #1, #٤ and #٥, #٦
	<b>Assignments</b>	2	5% (10)	5 and 12	LO #3, #5 and #6, #12
	<b>Projects</b>	1	10% (10)	Continuous	All
	<b>Report</b>	1	10% (10)	13	LO #٢, #٤ and #٦
<b>Summative assessment</b>	<b>Midterm Exam</b>	1 hr	10% (10)	8	LO #1 - #7
	<b>Final Exam</b>	3hr	50% (50)	16	All
<b>Total assessment</b>			100% (100 Marks)		

## Delivery Plan (Weekly work shop. Syllabus)

المنهاج الاسبوعي للورشنة

	Material Covered
<b>Week 1,2,3</b>	Include recognition of different tools. Employed for surface preparation and methods of application correctly, Devices of measuring dimensions, Calipers , types and uses , drill types and dimensions
<b>Week 4,5</b>	Steel miler , Veneer , Micrometer , Height & height gauge hand tools , Saws, Hammers , Files , Scriber , Chisels , Taps and dies , Surface plate , Bench working.
<b>Week 6,7</b>	blacksmithing saw, drill, welding machine, cutting rocket, concrete shot gun
<b>Week 8,9</b>	Lathing Workshoplathe machine – Parts – Operation - Practice on longitudinal lathing – Making center – Puncturing – Making external teeth – Practice - Employing measuring tools – internal & external lath machining
<b>Week 10,11</b>	Welding Workshop Include recognition of tools and materials employed – A gas cylinder of oxy – Acetylene welding of surface – Electrical welding exercise – Welding spot.
<b>Week 12,13</b>	Part F – plumbing characteristics of the casting process, casting defects, sand casting, sand casting steps, preparation and shaping, the necessary processes for sand casting, other casting methods, casting in permanent molds under pressure, lost wax casting (melted)
<b>Week 14,15</b>	electricity, Electrical insulation, insulation materials, winding methods, some practical examples, electrical contacts, diagrams, some practical examples

## Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
<b>Required Texts</b>	Engineering workshop chairs	NO
<b>Recommended Texts</b>		No
<b>Websites</b>		

## Grading Scheme

### مخطط الدرجات

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

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