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

# Introduction:

The educational program is a well-planned set of courses that include procedures and experiences arranged in the form of an academic syllabus. Its main goal is to improve and build graduates' skills so they are ready for the job market. The program is reviewed and evaluated every year through internal or external audit procedures and programs like the External Examiner Program.

The academic program description is a short summary of the main features of the program and its courses. It shows what skills students are working to develop based on the program's goals. This description is very important because it is the main part of getting the program accredited, and it is written by the teaching staff together under the supervision of scientific committees in the scientific departments.

This guide, in its second version, includes a description of the academic program after updating the subjects and paragraphs of the previous guide in light of the updates and developments of the educational system in Iraq, which included the description of the academic program in its traditional form (annual, quarterly), as well as the adoption of the academic program description circulated according to the letter of the Department of Studies T 3/2906 on 3/5/2023 regarding the programs that adopt the Bologna Process as the basis for their work.

In this regard, we can only emphasize the importance of writing an academic programs and course description to ensure the proper functioning of the educational process.

## **Concepts and terminology:**

<u>Academic Program Description</u>: The academic program description provides a brief summary of its vision, mission and objectives, including an accurate description of the targeted learning outcomes according to specific learning strategies.

<u>Course Description</u>: Provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the students to achieve, proving whether they have made the most of the available learning opportunities. It is derived from the program description.

**<u>Program Vision</u>**: An ambitious picture for the future of the academic program to be sophisticated, inspiring, stimulating, realistic and applicable.

**<u>Program Mission</u>**: Briefly outlines the objectives and activities necessary to achieve them and defines the program's development paths and directions.

**<u>Program Objectives</u>**: They are statements that describe what the academic program intends to achieve within a specific period of time and are measurable and observable.

<u>**Curriculum Structure**</u>: All courses / subjects included in the academic program according to the approved learning system (quarterly, annual, Bologna Process) whether it is a requirement (ministry, university, college and scientific department) with the number of credit hours.

**Learning Outcomes:** A compatible set of knowledge, skills and values acquired by students after the successful completion of the academic program and must determine the learning outcomes of each course in a way that achieves the objectives of the program.

<u>Teaching and learning strategies</u>: They are the strategies used by the faculty members to develop students' teaching and learning, and they are plans that are followed to reach the learning goals. They describe all classroom and extra-curricular activities to achieve the learning outcomes of the program.

# Academic Program Description Form

University Name: Southern Technical University (STU) Faculty/Institute: Basra Technical Institute Scientific Department: Electronic Techniques Academic or Professional Program Name: Diploma ... Electronic Techniques Final Certificate Name: Diploma in Electronic Techniques Academic System: Semester Based Description Preparation Date: 5/10/2023 File Completion Date: 14/2/2024

Signature: Head of Department Name: Haider M.

Date:

Signature: +

Scientific Associate Name: Dr. Abdul Dasser Abdul Jabbar Abbo

Date:

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department: Anwar abood

Date: 14/10/2024 Signature:

Approval of the Dean

#### 1. Program Vision

The Department of Electronic Techniques was established in 1987 to serve as a scientific and cultural center that provides the community with specialized knowledge in precision electronics and modern communications.

#### 2. Program Mission

The department's mission is to prepare and graduate intermediate technical personnel with high skills and ethics at the technical diploma level, following a two-year academic program after obtaining a secondary school certificate in its scientific and vocational branches. This aims to meet the needs of the country and the labor market in accordance with recognized global quality standards.

#### 3. Program Objectives

1. Training students to use laboratory equipment and modern software to conduct and simulate practical experiments as part of a continuous plan to develop curricula and educational programs.

2. Preparing qualified and skilled technical personnel with expertise in precision electronics and modern communications regarding operation and maintenance to meet the needs of the community and the labor market.

3. Training distinguished technicians in the installation, operation, and management of modern control systems in the oil industry.

4. Participating in applied research in the field of precision electronic techniques and modern communications to contribute to community service and the labor market.

#### 4. Program Accreditation

Does the program have program accreditation? And from which agency? Not yet

#### 5. Other external influences

Is there a sponsor for the program?

There is none

6. Program Structure							
Program Structure	Number of	Credit hours	Percentage	Reviews*			
	Courses						
Institution	5	12	11 %	Core			
Requirements				course			
College	2	4	3.5 %	Core			
Requirements				course			
Department	24	98	85.5 %				
Requirements							
Summer Training	يوجد						
Other							

\* This can include notes whether the course is basic or optional.

7. Program De	7. Program Description							
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2023-2024/First	E111	Electrical Circuits	2	2				
		and Measurements						
2023-2024/First	E112	Digital Circuits 1	2	2				
2023-2024/First	E113	Human Rights and	2					
		Democracy						
2023-2024/First	E114	Occupational	2					
		Safety						
2023-2024/First	E115	Mathematics 1	2					
2023-2024/First	E121	Electronics 2	2	2				

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8. Expected learning outcomes of the program	
Knowledge	
1. Understanding the Basics of Electronics: Knowledge of the theories	
and fundamental principles of electronics.	
2. <b>Operation and Maintenance of Devices</b> : Skills necessary for	
operating and maintaining electronic systems and equipment.	
3. Analysis of Electronic Circuits: The ability to analyze and design	
electronic circuits.	
4. Communication Technology: Knowledge of the fundamentals and	
techniques of modern communications.	
5. <b>Laboratory Software and Techniques</b> : Using laboratory software and	
equipment to conduct experiments.	
6. <b>Teamwork Skills</b> : The ability to work effectively within multidisciplinary	
teams.	
7. Quality Standards: Understanding global quality standards and how	
to apply them in practical fields.	
Skills	
1. Advanced Technical Skills: The ability to use and maintain	
electronic devices and equipment.	
2. <b>Circuit Analysis</b> : The ability to design and analyze electronic	
circuits.	
3. <b>Programming</b> : Basic programming skills for developing electronics-	
related applications.	
4. <b>Troubleshooting</b> : The ability to diagnose and repair faults in	
electronic systems.	
5. <b>Communication Technology</b> : Understanding modern communication	
technologies and their applications.	
6. <b>Project Management:</b> Skills in managing time and resources in	
technical projects.	
Ethics	
1. <b>Professional Ethics</b> : Commitment to the highest standards of	Learning Outcomes
professional and ethical conduct, including respect for intellectual property.	Statement 4
2. <b>Innovation</b> : Encouraging creative thinking and innovation in technical	
solutions.	
3. Accountability: Taking responsibility for professional actions and	
decisions.	

4.	Respect for Teamwork: Appreciating the importance of teamwork							
and o	and collaboration with others.							
5.	Continuous Learning: Commitment to updating skills and knowledge							
in the	e field of technology.							
6.	6. <b>Quality and Excellence</b> : Striving to achieve quality standards and							
excel	lence in performance.							

#### 9. Teaching and Learning Strategies

1. Active Learning: Encouraging students to actively participate through discussions, projects, and hands-on experiments.

2. Problem–Based Learning: Presenting real–world issues for students to solve, enhancing critical thinking.

3. Cooperative Learning: Organizing students into groups to work together, promoting communication and collaboration skills.

4. Self-Directed Learning: Encouraging students to explore knowledge independently through research and self-study.

5. Using Technology: Integrating technological tools such as educational software and simulations to enhance learning.

6. Continuous Assessment: Using periodic evaluations to determine student progress and provide immediate feedback.

7. Differentiated Instruction: Adapting teaching methods to meet the diverse needs and levels of students.

8. Project–Based Learning: Implementing practical projects related to the curriculum to enhance understanding and application.

9. Mentoring and Guidance: Providing support and advice to students to help them achieve their educational goals.

10. Experiential Learning: Enhancing learning through hands-on experiences that provide a deeper understanding of concepts.

#### 10. Evaluation methods

Weekly, Monthly, and Daily Exams, and Final Term Exam

## 11. Faculty

#### Faculty Members

Academic Rank	Specializa	ation	Special	Ni kills st	umber of the	e teaching
			(if applicable)	KIIIS SL	lan	
	General	Special		SI	taff	Lecturer
Dr. Haidar Mohammed Dawood (lecturer)	Electrical	Electronic		St	taff	
Dr. Abdul Nasir Abdul Jabbar (lecturer)	Electrical	Communication		SI	taff	
Dr. Mohammed Kazem Khudhair (lecturer)	Electrical	Communication		SI	taff	
Ahmed Sabri Kazem (Assistance lecturer)	Electrical	Communication		SI	taff	
Hana Abdul Jabbar Abdul (lecturer)	Electrical	Electrical		SI	taff	
Haidar Hassan Ali (Assistance lecturer)	Electrical	Electrical		SI	taff	
Khalid Kazem Saleh(Assistance lecturer)	Architect	Architect		SI	taff	
Muwafaq Jameel Saleh(Assistance lecturer)	Electrical	power		SI	taff	
Kamel Awda Kareem (Assistance lecturer)	Electrical	Communication		St	taff	
Alaa abdulhassan (Assistance lecturer)	Physics	Physics		SI	taff	

## **Professional Development**

#### Mentoring new faculty members

1. Training Workshops: Organizing workshops to develop teaching skills and use modern technologies.

2. Providing Resources: Offering educational and administrative resources such as academic guides and educational programs.

3. Regular Meetings: Organizing regular meetings to discuss challenges and share experiences.

4. Evaluation and Review: Conducting periodic performance assessments and providing feedback to improve quality.

5. Encouraging Participation in Activities: Inviting new members to participate in academic and social events to enhance belonging.

6. Providing Psychological Support: Offering psychological support and counseling services to promote the mental well-being of members.

7. Encouraging Research and Development: Supporting new members in engaging in research and professional development activities.

#### Professional development of faculty members

1. Needs Assessment:

• Conducting periodic assessments to identify members' needs in skills and knowledge.

2. Training Programs and Workshops:

• Organizing regular workshops on modern teaching methods, technology use, and professional ethics.

3. Mentoring and Guidance:

• Providing continuous support from supervisors or mentors to guide new members.

4. Research Development:

• Encouraging participation in research and academic projects by providing funding support and advice.

5. Continuous Learning:

• Offering opportunities for enrollment in advanced educational courses and online learning resources.

6. Evaluation and Review:

• Conducting periodic evaluations of academic performance and providing feedback to improve performance.

7. Participation in Conferences:

Encouraging participation in conferences and seminars to enhance academic

networking and professional development.

8. Recognition of Achievements:

• Providing incentives and recognition for members who achieve outstanding academic accomplishments.

This plan aims to enhance the efficiency of faculty members and improve the quality of education provided.

## 12. Acceptance Criterion

(Setting regulations related to enrollment in the college or institute, whether central admission or others)

## 13. The most important sources of information about the program

1. Floyd, Thomas L. Electronic devices. Pearson Education India, 2005

2. Gupta, J. B. Fundamentals Of Electrical Engg. & Electronics. SK Kataria and Sons, 2009.

3. Goldsmith, Andrea. Wireless communications. Cambridge university press, 2005.

4. Djordjevic, Ivan B. Advanced optical and wireless communications systems. Switzerland: Springer, 2018.

5. Kumar, Sanjay. Wireless Communication–the fundamental and advanced concepts. River Publishers, 2022.

14. Program Development Plan

1. Equipping classrooms with modern teaching tools.

2. Updating laboratory equipment to align with advancements in communications and precision electronics.

			Pro	gram	Skills	o Outl	ine								
	Required program Learning outcomes														
Year/Level	Year/Level Course Course Name Basic		Knov	wledge			Skills	5			Ethics				
			or option al	A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	С3	C4
2023-2024/First	E110	Electronic1	Basic	✓					~				✓		
	E121	Electronic2	Basic	1					~			✓			
2023-2024/First	E111	Electrical Circuits Measurements1	Basic		•			~				•			
	E122	Electrical Circuits Measurements2	Basic		•			~					•		
2023-2024/First	E112	Digital Circuits 1	Basic				✓			$\checkmark$					
	E123	Digital Circuits 2	Basic				<ul> <li>✓</li> </ul>			<ul> <li>✓</li> </ul>					
2023-2024/Second	E211	Communication1	Basic			✓		✓					✓		
	E222	Communication2	Basic			~		1					<ul> <li>✓</li> </ul>		

2023-2024/Second	E213	Optical Fibers1	Basic			✓		✓					
2023-2024/Second	E224	Optical Fibers2	Basic			✓		✓					
2023-2024/Second	E212	Microwave1	Basic		~				✓				
2023-2024/Second	E223	Microwave1	Basic		•				✓				
2023-2024/Second	E225	Measuring	Basic	<ul> <li>Image: A start of the start of</li></ul>				~					
		Instruments1											
2023-2024/Second	E214	Measuring	Basic	✓				✓					
		Instruments2											
2023-2024/Second	E226	Electronic Devices	Basic				✓			✓	✓		
		Maintenance											
		Workshop											
2023-2024/Second	E210	Electronic	Basic		✓				✓				
		circuit1											
2023-2024/Second	E221	Electronic	Basic		$\checkmark$				✓				
		circuitz								1			

• Please tick the boxes corresponding to the individual program learning outcomes under evaluation.

1. Course Name:

Electronic1

2. Course Code:

E110

3. Semester / Year:

Semester

4. Description Preparation Date:

14/02/2024

5. Available Attendance Forms:

Attendance only

6. Number of Credit Hours (Total) / Number of Units (Total)60 hours/4 hour weekly/4

# 7. Course administrator's name (mention all, if more than one name) Name: Alaa abdulhassan Email: <u>alaa.abdulhussain@stu.edu.iq</u>

## 8. Course Objectives

1.	Developing Basic Understanding of Electronics: Enabling students to	•							
underst	understand the fundamental principles of electronics, including basic electronic								
compor	nents such as resistors, capacitors, and transistors.	•							
2.	Applying Theoretical Concepts: Enhancing the ability to apply theoretic								
concep	ts in the design and analysis of electronic circuits.								
3.	Developing Practical Skills: Providing hands-on training through								
laborate	ory experiments, allowing students to acquire the skills necessary to buil								
and tes	st electronic circuits.								
4.	I. Information and Communication Technology: Understanding the role of								
electror	electronics in information and communication technology and its practical								
applica	tions.								
5.	Enhancing Critical Thinking: Encouraging students to engage in critical								
analytic	cal thinking when solving problems related to electronics.								
9.	Teaching and Learning Strategies								
1.	Cooperative Concept Planning Strategy.								
2.	2. Brainstorming Teaching Strategy.								
3.	3. Note-taking Sequence Strategy.								
10. C	Course Structure								

Week	Hours	Required Learning	Unit or subject	Learning method	Evaluation				
		Outcomes	name		method				
1	<u>Ab auro</u>	1 Understanding	1 Diada	1 Conducting					
1	4nours	I. Understanding	1. Dioue	1. Collucting					
2	4hours	2 Developing	Forward Rias	evneriments to hui					
3	4hours	Critical Thinking and	2 Diode	and test electronic					
4	4hours	Problem-Solving Skill	Characteristics	circuits. This	Weekly.				
5	4hours	through Circuit Analy	Reverse Bias	enhances theoretic	Monthly, Dail				
6	4hours	and Fault Detection.	3. Half-Wav	understanding and	and Written				
7	4hours	3. Ability to Use	Rectifier	develops practical	Exams, and Fi				
8	4hours	Electronic Laboratory	4. Full-Wav	skills.	Term Exam.				
q	Abours	Tools, such as	Rectifier (Cent	2. Seeking					
) 10	Abourg	Multimeters, Signal	Tapped)	feedback from					
10	4110015	Generators, and	5. Full-Wav	instructors and pee					
11	4nours	Oscilloscopes.	Rectifier Using	to identify strength					
12	4hours	4. Analyzing	Center-Tapped	and weaknesses.					
13	4hours	Electronic Circuits	Transformer	3. Reviewing					
14	4hours		6. Half-Wav	concepts periodica					
			Rectifier	and applying them					
			7. Full-Wave	new problems to					
			Rectifier with	reinforce memory					
			Clipping	And under standing					
			Circuits	4. Using					
			9 DC Volt	and interactive					
			Doubler Circuits	applications to bett					
			10. Zener Die	understand concen					
			- Characteristics	such as circuit					
			11. Using Zer	simulations.					
			Diode	5. Encouraging					
			12. Common-	self-research on ne					
			Base Transis	topics in electronic					
			Characteristics	and exploring rece					
			13. Common-	developments.					
			Emitter Transis						
			Characteristics						
			14. Common-						
			Base Amplifier						
11.	Course E	valuation							
Distrib	ution as fo	llows: 20 points for M	idterm Theoretica	al Exams for the firs	t semester, 20				
points	for Midter	m Practical Exams for	the first semeste	er, 10 points for Dai	ily Exams and				
Contin	uous Asses	ssment, and 50 points f	or the Final Exam	l.					
12.	Learning	and Teaching Resor	urces						
Require	ed textbook	s (curricular books, if a	ny) Flo Edu	yd, Thomas L. Electro acation India, 2005	onic devices. Pea				
Main re	Education India, 2005       Wain references (sources)     Gupta, J. B. Fundamentals Of Electrical Er								

Recommended books and references (scientific journals, reports)	Goldsmith, Andrea. <i>Wireless communications</i> . Cambridge university press, 2005.
Electronic References, Websites	https://zlibrary-asia.se/ https://www.researchgate.net/

Course Name:

Electronic2

Course Code:

E121

Semester / Year:

Semester

**Description Preparation Date:** 

14/02/2024

Available Attendance Forms:

Attendance only

Number of Credit Hours (Total) / Number of Units (Total)

60 hours/4 hour weekly/4

## Course administrator's name (mention all, if more than one name) Name: Alaa abdulhassan

Email: alaa.abdulhussain@stu.edu.iq

**Course Objectives** 

1.	Developing Basic Understanding of Electronics: Enabling students to	•	
underst	and the fundamental principles of electronics, including basic electronic	•	
compor	ients such as resistors, capacitors, and transistors.	•	•••
2.	Applying Theoretical Concepts: Enhancing the ability to apply theoretical		
concept	ts in the design and analysis of electronic circuits.		
3.	Developing Practical Skills: Providing hands-on training through laboratory		
experim	nents, allowing students to acquire the skills necessary to build and test		
electror	nic circuits.		
4.	Information and Communication Technology: Understanding the role of		
electror	nics in information and communication technology and its practical		
applicat	tions.		
5.	Enhancing Critical Thinking: Encouraging students to engage in critical		
analytic	al thinking when solving problems related to electronics.		
Те	aching and Learning Strategies		
1.	Cooperative Concept Planning Strategy.		
2.	Brainstorming Teaching Strategy.		
3.	Note-taking Sequence Strategy.		
Cours	e Structure		

Week	Hours	Required Learning	Unit or subject	Learning method	Evaluation
		Outcomes	name		method
1 2 3 4 5 6 7 8 9 10 11 12 13 14	4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours	<ol> <li>Understanding Electronics Application</li> <li>Developing</li> <li>Critical Thinking and Problem-Solving Skill through Circuit Analy and Fault Detection.</li> <li>Ability to Use Electronic Laboratory Tools, such as Multimeters, Signal Generators, and Oscilloscopes.</li> <li>Analyzing Electronic Circuits</li> </ol>	1.Common Emitter Amplifier 2.Common Collector Amplifier 3.Common Source Amplifier 4.Measuring H- Parameters 5.Using the Transist in Voltage Regulation Circuits – Series Regulator 6.FET Transistor Characteristics 7.Common Source Amplifier 8.Common Drain Amplifier 9.Photodiode Characteristics 10.Phototransistor Characteristics 11.Thyristor (SCR) Characteristics 11.Thyristor (SCR) Characteristics 12.Using Thyristor – Its Characteristics 12.Using Thyristor – Its Characteristics 3.Application Circu for Using Thyristor i Controlling Light Bu Brightness 14.Amplifier Circuit Using Integrated Circuit 15.Using Operatio Amplifier to Sum T Signals and Amp the Voltage Differer Between Them	<ol> <li>Conducting laboratory experiments to bui and test electronic circuits. This enhances theoretic understanding and develops practical skills.</li> <li>Seeking feedback from instructors and peet to identify strength and weaknesses.</li> <li>Reviewing concepts periodica and applying them new problems to reinforce memory and understanding 4. Using educational softwa and interactive applications to bett understand concep such as circuit simulations.</li> <li>Encouraging self-research on ne topics in electronic and exploring recent developments.</li> </ol>	Weekly, Monthly, Dai and Written Exams, and Final Term Exam.

Distribution as follows: 20 points for Midterm Theoretical Exams for the first semester, 20 points for Midterm Practical Exams for the first semester, 10 points for Daily Exams and Continuous Assessment, and 50 points for the Final Exam.

Learning and Teaching Resources

Required textbooks (curricular books, if any)	Floyd, Thomas L. Electronic devices. Pear			
	Education India, 2005			
Main references (sources)	Gupta, J. B. Fundamentals Of Electrical Eng			
	Electronics. SK Kataria and Sons, 2009.			
Recommended books and references (scientific	Goldsmith, Andrea. Wireless communications.			
Tecommended books and references (scientific	Cambridge university press, 2005.			
iournals, reports)				
J				
Electronic References. Websites				
,	https://zlibrary-asia.se/			
	https://www.researchgate.net/			

Course Name:		
Digital circuit1		
Course Code:		
E112		
Semester / Year:		
Semester		
Description Preparation Date:		
14/02/2024		
Available Attendance Forms:		
$\begin{array}{c} \text{Attendance only} \\ \text{NL} = 1  \text{(C - 1') II}  \text{(T + 1) (NL - 1 - C II) '(T + 1)} \\ \end{array}$		
Number of Credit Hours (Total) / Number of Units (Total)		
60 hours/4 hour weekly/4 unit		
Course administrator's name (mention all, if more than o	one name)	
Name: Dr. Abdulnasser Abduljabar		
Email: abdulbasir.abdujabar@stu.edu.iq		
Course Objectives		
1. Developing Basic Understanding of digital circuits: Enabling students to	•	
understand the fundamental principles of digital circuits, including basic electronic	•	•••••
components such as adders, digital gates, and comparator.	•	•••••
2. Applying Theoretical Concepts: Enhancing the ability to apply theoretical		
concepts in the design and analysis of electronic circuits.		
3. Developing Practical Skills: Providing hands-on training through laborato		
experiments, allowing students to acquire the skills necessary to build and test		
electronic circuits.		
4. Information and Communication Technology: Understanding the role of		
digital circuits in information and communication technology and its practical		
applications.		
5. Enhancing Critical Thinking: Encouraging students to engage in critical		
analytical thinking when solving problems related to electronics.		
Teaching and Learning Strategies		
1. Cooperative Concept Planning Strategy.		
2. Brainstorming Teaching Strategy.		
3. Note-taking Sequence Strategy.		

Course Structure					
Week	Hours	Required Learning	Unit or subjee	ct Learning method	Evaluation
		Outcomes	name		method
			4. 11. 1. 0		
1 2 3 4 5 6 7 8 9 10 11 12 13 14	4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours	<ol> <li>Understanding digital circuits Applications</li> <li>Developing Critical Thinking and Problem-Solving Skill through Circuit Analy and Fault Detection.</li> <li>Ability to Use Electronic Laboratory Tools, such as Multimeters, Signal Generators, and Oscilloscopes.</li> <li>Analyzing Electronic Circuits</li> </ol>	1. Number System 2.Binary System 3.Decimal System 5.Conversion Binary to Dect 6.Logic Gates 7.Representat Logic Gates 8.Boolean Alg 9.De Morgan's Theorems 10.Karnaugh 11.Karnaugh 11.Karnaugh 12.Karnaugh 12.Karnaugh 12.Karnaugh 13.Digital Comparator 14.Two-Level Comparator 15.Codebreak 16.Encoding 17.Decimal to Encoding	stem1.Conductingemlaboratorytemexperiments to buiand test digital circuits. Thisfromenhances theoreticimalunderstanding and develops practicalimalunderstanding and develops practicalimalunderstanding and develops practicalimalunderstanding and develops practicalimalunderstanding and develops practicalimal2.Seeking feedback frominstructors and peet to identify strength and weaknesses.Map3.Reviewing concepts periodical and applying them new problems to reinforce memory and understanding 4.Vanunderstanding educational softwa and interactive applications to beth such as circuit simulations.9.Binunderstand concep such as circuit simulations.5.Encouraging self-research on ne topics in electronic and exploring recent developments.	Weekly, Monthly, Dail and Written Exams, and Final Term Exam.
Cour Distrib	se Evalua	ation Illows: 20 points for M	lidterm Theore	etical Exams for the first	semester, 20
points Contin	for Midter uous Asses	rm Practical Exams for ssment, and 50 points f	r the first sem For the Final Ex	ester, 10 points for Dail am.	y Exams and
Lean	ning and <sup>·</sup>	Teaching Resources			
Require	ed textbook	s (curricular books, if a	ny) Ho	oldsworth, Brian, and Clive gic design. Elsevier, 2002.	Woods. Digital
Main re	ferences (	sources)		Alam, Mansaf, and Bashir Design. PHI Learning Pvt.	<sup>-</sup> Alam. <i>Digital L</i> Ltd., 2015.

Recommended books and references (scientific journals, reports)	Dally, William James, and R. Cu Harting. <i>Digital design: a systems approa</i> Cambridge University Press, 2012.
Electronic References, Websites	https://zlibrary-asia.se/ https://www.researchgate.net/

Course Name:				
Digital circuit2				
Course Code:				
E123				
Semester / Year:				
Semester				
Description Preparation Date:				
14/02/2024				
Available Attendance Forms:				
Attendance only				
Number of Credit Hours (Total) / Number of Units (Total)				
60 hours/4 hour weekly/4 unit				
Course administrator's name (mention all, if more than or	ne name)			
Name: Dr. Abdulnasser Abduljabar				
Email: <u>abdulbasir.abdujabar@stu.edu.iq</u>				
Course Objectives				
1. Developing Basic Understanding of digital circuits: Enabling students to	•	•••••		
understand the fundamental principles of digital circuits, including basic electronic	•	•••••		
components such as adders, digital gates, and comparator.	•			
2. Applying Theoretical Concepts: Enhancing the ability to apply theoretical				
concepts in the design and analysis of electronic circuits.				
3. Developing Practical Skills: Providing hands-on training through laboratory				
experiments, allowing students to acquire the skills necessary to build and test				
electronic circuits.				
4. Information and Communication Technology: Understanding the role of dig				
circuits in information and communication technology and its practical applications.				
5. Enhancing Critical Thinking: Encouraging students to engage in critical				
analytical thinking when solving problems related to electronics.				
Teaching and Learning Strategies				
1. Cooperative Concept Planning Strategy.				
2. Brainstorming Teaching Strategy.				
3. Note-taking Sequence Strategy.				
Course Structure				

Week	Hours	Required Learning	Unit or s	ubject	Learning method	Evaluation
		Outcomes	name			method
1 2 3 4 5 6 7 8 9 10 11 12 13 14	4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours	1.Understanding digital circuits Applications 2.2.Developing Critical Thinking and Problem-Solving Skill through Circuit Analy and Fault Detection. 3.3.Ability to Use Electronic Laboratory Tools, such as Multimeters, Signal Generators, and Oscilloscopes. 4.4.Analyzing Electronic Circuits	1.Commo Amplifien 2.Commo Amplifien 3.Commo Amplifien 4.Measur Paramete 5.Using ti in Voltag Circuits - Regulato 6.FET Tra Characte 7.Commo Amplifien 8.Commo Amplifien 9.Photod Characte 10.Photo Characte	on Emitter on Collector on Source ing H- ers he Transist e Regulatio Series r ansistor ristics on Source on Drain ristics transistor ristics transistor ristics	I.Conducting laboratory experiments to bui and test digital circuits. This enhances theoretic understanding and develops practical skills.2.Seeking feedback from instructors and peet to identify strength and weaknesses.3.Reviewing concepts periodica and applying them new problems to reinforce memory and understanding 4.4.Using educational softwa and interactive applications to bett understand concep such as circuit simulations.5.Encouraging self-research on ne topics in electronic and exploring reced developments.	Weekly, Monthly, Dai and Written Exams, and Final Term Exam.
Cour	se Evalua	ation	I			
Distribution as follows: 20 points for Midterm Theoretical Exams for the first semester, 20 points for Midterm Practical Exams for the first semester, 10 points for Daily Exams and Continuous Assessment, and 50 points for the Final Exam.						
Lear	ning and	Teaching Resources	6			
Require	ed textbook	s (curricular books, if a	ny)	Holdsw logic de	orth, Brian, and Clive Vesign. Elsevier, 2002.	Woods. Digital
Main re	eferences (	sources)		Ala Des	m, Mansaf, and Bashir <i>sign</i> . PHI Learning Pvt.	Alam. <i>Digital Lo</i> Ltd., 2015.
Recom journals	mended b s, reports	ooks and references .)	(scientific	Dal Har Car	ly, William James, ting. <i>Digital design: a</i> mbridge University Pres	and R. Cu systems approa s, 2012.

	Electronic	References,	Websites
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https://zlibrary-asia.se/

https://www.researchgate.net/

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Course Description Form		
Course Name:		
Electrical Circuits and Measurements1		
Course Code:		
E111		
Semester / Year:		
Semester		
Description Preparation Date:		
14/02/2024		
Available Attendance Forms:		
Attendance only		
Number of Credit Hours (Total) / Number of Units (Total)		
60 hours/4 hour weekly/4 unit		
Course administrator's name (mention all, if more than o	one name)	
Name: Haider Hassan		
Email: <u>haider.hasan@stu.edu.iq</u>		
Course Objectives		
1. Developing Basic Understanding of electrical circuits: Enabling students	•	•••••
understand the fundamental principles of digital circuits, including basic electric	•	•••••
components such as resistor, capacitor, and inductor.	•	•••••
2. Applying Theoretical Concepts: Enhancing the ability to apply theoretical		
concepts in the design and analysis of electrical circuits.		
3. Developing Practical Skills: Providing hands-on training through laborato		
experiments, allowing students to acquire the skills necessary to build and test		
electronic circuits.		
4. Information and Communication Technology: Understanding the role of		
electrical circuits in information and communication technology and its practical		
applications.		
5. Enhancing Critical Thinking: Encouraging students to engage in critical		
analytical thinking when solving problems related to electronics.		
Teaching and Learning Strategies		
1. Cooperative Concept Planning Strategy.		
2. Brainstorming Teaching Strategy.		
3. Note-taking Sequence Strategy.		
Course Structure		

Week	Hours	Required Learning	Unit or	subject	Learning method	Evaluation
		Outcomes	name	-	-	method
1     2     3     4     5     6     7     8     9     10     11     12     13     14	4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours	<ol> <li>Understanding electrical circuits theorem</li> <li>Developing Critical Thinking and Problem-Solving Skill through Circuit Analy and Fault Detection.</li> <li>Ability to Use Electrical Laboratory Tools, such as Multimeters, Signal Generators, and Oscilloscopes.</li> <li>Analyzing electrical Circuits</li> </ol>	1.Units 2.Direct Circuits 3.Series Circuits 4.Kirch 5.Maxw 6.Theve 7.Norto 8.Super 7.Norto 8.Super 7.Norto 8.Super 9.Altern Quantit 10.Phas How to 11.Effed Alterna on Resi Inducta Capacit 12.Resi Inducta 13.Resi Capacit 14.Resi Inducta Capacit 15.Tota 16.Reso Circuits	System Use t Current and Parall hoff's Laws rell's Law enin's m' n's Theore position m nating ies and Calculate I ct of ting Curren stance, ance, and ance stance and ance stance and ance stance, and ance stance, and ance	1.Conducting laboratory experiments to bui and test electrical circuits. This enhances theoretic understanding and develops practical skills.2.Seeking feedback from instructors and peet to identify strength and weaknesses.3.Reviewing concepts periodica and applying them new problems to reinforce memory and understanding 4.4.Using educational softwa and interactive applications to beth understand concep such as circuit simulations.5.Encouraging self-research on ne topics in electronic and exploring rece developments.	Weekly, Monthly, Dail and Written Exams, and Final Term Exam.
Cour	se Evalua	ation				
Distribution as follows: 20 points for Midterm Theoretical Exams for the first semester, 20 points for Midterm Practical Exams for the first semester, 10 points for Daily Exams and Continuous Assessment, and 50 points for the Final Exam.						
Lean	ning and	Teaching Resources	;			
Require	ed textbook	s (curricular books, if a	ny)	Hughes <i>Title)</i> (1	, Edward. "Electrical te 977).	chnology." <i>(No</i>
Main re	Main references (sources)			Svc Dor Wil	boda, James A., f. <i>Introduction to elec</i> ev & Sons, 2013.	and Richard ctric circuits. J

Recommended books and references (scientific journals, reports)	Bakshi, Uday A. <i>Basic electrical engineer</i> Technical Publications, 2020.
Electronic References, Websites	https://zlibrary-asia.se/ https://www.researchgate.net/

Course Description Form				
Course Name:				
Electrical Circuits and Measurements2				
Course Code:				
E122				
Semester / Year:				
Semester				
Description Preparation Date:				
14/02/2024				
Available Attendance Forms:				
Attendance only				
Number of Credit Hours (Total) / Number of Units (Total)				
60 hours/4 hour weekly/4 unit				
Course administrator's name (mention all, if more than o	one name)			
Name: Haider Hassan				
Email: <u>haider.hasan@stu.edu.iq</u>				
Course Objectives				
1. Developing Basic Understanding of electrical circuits: Enabling students	•			
understand the fundamental principles of digital circuits, including basic electric	•			
components such as resistor, capacitor, and inductor.	•			
2. Applying Theoretical Concepts: Enhancing the ability to apply theoretical				
concepts in the design and analysis of electrical circuits.				
3. Developing Practical Skills: Providing hands-on training through laborato				
experiments, allowing students to acquire the skills necessary to build and test				
electronic circuits.				
4. Information and Communication Technology: Understanding the role of				
electrical circuits in information and communication technology and its practical				
applications.				
5. Enhancing Critical Thinking: Encouraging students to engage in critical	ł			
analytical thinking when solving problems related to electronics.				
Teaching and Learning Strategies				
1. Cooperative Concept Planning Strategy.				
2. Brainstorming Teaching Strategy.				
3. Note-taking Sequence Strategy.				
Course Structure				

Week	Hours	Required Learning	Unit or	subject	Learning method	Evaluation
		Outcomes	name			method
1 2 3 4 5 6 7 8 9 10 11 12 13 14	4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours	<ol> <li>Understanding electrical circuits theorem</li> <li>Developing Critical Thinking and Problem-Solving Skill through Circuit Analy and Fault Detection.</li> <li>Ability to Use Electrical Laboratory Tools, such as Multimeters, Signal Generators, and Oscilloscopes.</li> <li>Analyzing electrical Circuits</li> </ol>	1.Series and Par Resonan 2.Norto Theven Theoren 3.Power Alterna Circuits 4.Total Power 5.Maxin Transfe 6.Analy Electric Using N Method 7.Three Alterna Circuits 8.Phase 9.Practi 10.Meas for Three Loads 11.Tran in Circu 12.Tran Current 13.Self- the Coil 14.Tran	s Resonanc allel nce n's and in's ms r in ting Currer Apparent num Power r Theorem zing al Network ode Voltag -Phase ting Currer Power cal Exampl suring Pow ee-Phase sient State its sient AC s Inductance sformers	<ol> <li>Conducting laboratory</li> <li>experiments to bui and test electrical circuits. This</li> <li>enhances theoretic understanding and develops practical skills.</li> <li>Seeking feedback from</li> <li>instructors and peet to identify strength and weaknesses.</li> <li>Reviewing</li> <li>concepts periodical and applying them</li> <li>new problems to</li> <li>reinforce memory</li> <li>and understanding</li> <li>Using</li> <li>educational softwa</li> <li>and interactive</li> <li>applications to betfunderstand conception</li> <li>simulations.</li> <li>Encouraging</li> <li>self-research on ne</li> <li>topics in electronic</li> <li>and exploring recent</li> </ol>	Weekly, Monthly, Dail and Written Exams, and Final Term Exam.
Course Evaluation						
Distribution as follows: 20 points for Midterm Theoretical Exams for the first semester, 20 points for Midterm Practical Exams for the first semester, 10 points for Daily Exams and Continuous Assessment, and 50 points for the Final Exam.						
Learning and Teaching Resources						
Required textbooks (curricular books, if any) Hughes, Edward. "Electrical technology <i>Title</i> ) (1977).				chnology." <i>(No</i>		
Main re	Main references (sources)				boda, James A., f. <i>Introduction to elec</i> ey & Sons, 2013.	and Richard ctric circuits. J

Recommended books and references (scientific journals, reports)	Bakshi, Uday A. <i>Basic electrical engineer</i> Technical Publications, 2020.
Electronic References, Websites	https://zlibrary-asia.se/ https://www.researchgate.net/

Course Name:

Engineering and Electrical Drawing

Course Code:

E125

Semester / Year:

year

Description Preparation Date:

14/02/2024

Available Attendance Forms:

Attendance only

Number of Credit Hours (Total) / Number of Units (Total)

90 hours/3 hour weekly/6 unit

## Course administrator's name (mention all, if more than one name) Name: Khalid Kazem Saleh

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Email: khalid.kadhem@stu.edu.iq

**Course Objectives** 

Training students on the correct principles of engineering drawing, electroand electrical circuit diagrams, and reading them.

#### Teaching and Learning Strategies

- 1. Cooperative Concept Planning Strategy.
- 2. Brainstorming Teaching Strategy.
- 3. Note-taking Sequence Strategy.

#### **Course Structure**

Week	Hours	Required Learning	Unit or subject	Learning method	Evaluation
		Outcomes	name		method
1	4hours	1.Understanding the	1.Importance of	1.Conducting	
2	4hours	Basic Principles of	Engineering and	laboratory	
3	4hours	Engineering and	Industrial Drawing	experiments to bui	
1	Abours	Electrical Drawing	2.Drawing Types of a contract of the second se	digital circuits. This	
4	4110015	2.Developing Critical	Lines	enhances theoretic	Weekly,
5	4hours	Thinking and Probler	3.Set of Simple	understanding and	Monthly, Dail
6	4hours	Solving Skills through	Geometric Shapes	develops practical	and Written
7	4hours	Circuit Drawing and	4.Explanation of	skills.	Exams, and
8	4hours	Fault Detection	Electrical and	2.Seeking feedback	Final Term
g	Abours		Electronic Symbol	from instructors ar	Exam.
,	THOUIS			peers to identify	

10	Abours	3 Ability to Use	5 Drawing a Danal	strengths and
10	4nours	Required Drawing	S.Diawing a Patiel	su eliguis allu weaknesses
11	4hours	Tools	Flectronic Symbol	3 Reviewing concer
12	4hours	4 Ability to Read a	6.Writing Latin	periodically and
13	4hours	Analvze Techni	Letters and Numb	applying them to n
14	4hours	Drawings	7.How to Distribut	problems to reinfor
15	4hours	0	and Install	memory and
16	4hours		Measuring	understanding.
17	4hours		Instruments	4.Using educationa
18	4hours		8.Geometric	software and
19	4hours		Operations	interactive
20	Abours		9.Drawing Tangen	applications to bet
20	4110u15		to a Circle	understand concep
21	4nours		10.Line Tangent to	such as circuit
	4nours		1 WO GIVEN LIFCLES	Simulations.
23	4hours		LI.DI awilig a Regular Polygon	research on new
24	4hours		12 Flectrical	topics in electronic
25	4hours		Installations	and exploring recei
26	4hours		13.Drawing a Pane	developments.
27	4hours		for Complete	
28	4hours		Connections of a	
29	4hours		Fluorescent Tube	
30	4hours		14.Drawing a Pane	
50	FIIOUIS		for Electronic	
			Connections	
			15.Drawing the So	
			Shape	
			16.Explaining Hov	
			to Dimension	
			Coometrically	
			17 Drawing Comp	
			Perspective	
			18.Drawing a Pane	
			for an Electronic	
			Circuit with Gates	
			19.Drawing a Pane	
			for an Electronic	
			Circuit with	
			Integrated Circuits	
			20.Applications of	
			Projection Drawin	
			21.Drawing	
			Perspective from t	
			22 Sections in	
			22. Sections in	
			Objects	

for Motor Speed Control       for Motor Speed Control         24.How to Read a Diagram of Electri Circuits       Diagram of Electri Circuits         25.Applications of Electrical Drawing on the Electronic Calculator       Electrical Drawing         Course Evaluation       Z6.Using the ORC System and Packa]         Distribution as follows: 20 points for Midterm Practical Exams for the first semester, 2 points for Midterm Practical Exams for the second semester, 10 points for Daily Exams ar Continuous Assessment, and 50 points for the Final Exam.         Learning and Teaching Resources       Engineering Drawing Technology((A.V Wander William))MC-Graw-Hill 1977         Main references (sources)       Engineering Drawing Graphic Techolog Frend MC-Graw-Hill 1976			23.Drawing a Pane
Control       24.How to Read a         Diagram of Electri       Circuits         Circuits       25.Applications of         Electrical Drawing       on the Electronic         Calculator       26.Using the ORC         System and Packa;       System and Packa;         Course Evaluation       Engineering for Midterm Practical Exams for the first semester, 2         points for Midterm Practical Exams for the second semester, 10 points for Daily Exams ar         Continuous Assessment, and 50 points for the Final Exam.         Learning and Teaching Resources         Required textbooks (curricular books, if any)       Engineering Drawing Technology((A.W. Wander William))MC-Graw-Hill 1977         Main references (sources)       Engineering Drawing Graphic Techology (A.W. Wander William))MC-Graw-Hill 1976			for Motor Speed
24.How to Read a         Diagram of Electri         Circuits         25.Applications of         Electrical Drawing         on the Electronic         Calculator         26.Using the ORC         System and Packa         Distribution as follows: 20 points for Midterm Practical Exams for the first semester, 2         points for Midterm Practical Exams for the second semester, 10 points for Daily Exams ar         Continuous Assessment, and 50 points for the Final Exam.         Learning and Teaching Resources         Required textbooks (curricular books, if any)         Main references (sources)         Engineering Drawing Graphic Techology ((A.W. Wander William))MC-Graw-Hill 1977			Control
Diagram of Electri Circuits       Diagram of Electri Circuits         25.Applications of Electrical Drawing on the Electronic Calculator       Diagram of Electri Circuits         0       Electrical Drawing on the Electronic Calculator       Diagram of Electri Circuits         25.Applications of Electrical Drawing on the Electronic Calculator       Distribution       Engine         Distribution as follows: 20 points for Midterm Practical Exams for the first semester, 2       Distribution as follows: 20 points for the second semester, 10 points for Daily Exams ar Continuous Assessment, and 50 points for the Final Exam.         Learning and Teaching Resources       Engineering Drawing Technology((A.V Wander William))MC-Graw-Hill 1977         Main references (sources)       Engineering Drawing Graphic Technology			24.How to Read a
Circuits         25.Applications of         Electrical Drawing         on the Electronic         Calculator         26.Using the ORC         System and Packag         Course Evaluation         Distribution as follows: 20 points for Midterm Practical Exams for the first semester, 2         points for Midterm Practical Exams for the second semester, 10 points for Daily Exams ar         Continuous Assessment, and 50 points for the Final Exam.         Learning and Teaching Resources         Required textbooks (curricular books, if any)         Engineering Drawing Technology((A.W Wander William))MC-Graw-Hill 1977         Main references (sources)			Diagram of Electri
25.Applications of Electrical Drawing on the Electronic Calculator 26.Using the ORC System and Packag         Course Evaluation         Distribution as follows: 20 points for Midterm Practical Exams for the first semester, 2 points for Midterm Practical Exams for the second semester, 10 points for Daily Exams ar Continuous Assessment, and 50 points for the Final Exam.         Learning and Teaching Resources         Required textbooks (curricular books, if any)         Engineering Drawing Technology((A.W Wander William))MC-Graw-Hill 1977         Main references (sources)			Circuits
Electrical Drawing on the Electronic Calculator 26.Using the ORC System and Packa         Course Evaluation         Distribution as follows: 20 points for Midterm Practical Exams for the first semester, 2 points for Midterm Practical Exams for the second semester, 10 points for Daily Exams ar Continuous Assessment, and 50 points for the Final Exam.         Learning and Teaching Resources         Required textbooks (curricular books, if any)         Engineering Drawing Technology((A.V Wander William))MC-Graw-Hill 1977         Main references (sources)			25.Applications of
on the Electronic       Calculator         Calculator       26.Using the ORC         System and Packa       System and Packa         Course Evaluation       Distribution as follows: 20 points for Midterm Practical Exams for the first semester, 2         points for Midterm Practical Exams for the second semester, 10 points for Daily Exams ar Continuous Assessment, and 50 points for the Final Exam.         Learning and Teaching Resources         Required textbooks (curricular books, if any)       Engineering Drawing Technology((A.W Wander William))MC-Graw-Hill 1977         Main references (sources)       Engineering Drawing Graphic Technology			Electrical Drawing
Calculator         26.Using the ORC         System and Packa;         Course Evaluation         Distribution as follows: 20 points for Midterm Practical Exams for the first semester, 2         points for Midterm Practical Exams for the second semester, 10 points for Daily Exams ar         Continuous Assessment, and 50 points for the Final Exam.         Learning and Teaching Resources         Required textbooks (curricular books, if any)         Engineering Drawing Technology((A.W Wander William))MC-Graw-Hill 1977         Main references (sources)			on the Electronic
26.Using the ORC         System and Packa;         Course Evaluation         Distribution as follows: 20 points for Midterm Practical Exams for the first semester, 2         points for Midterm Practical Exams for the second semester, 10 points for Daily Exams ar         Continuous Assessment, and 50 points for the Final Exam.         Learning and Teaching Resources         Required textbooks (curricular books, if any)         Engineering Drawing Technology((A.W Wander William))MC-Graw-Hill 1977         Main references (sources)			Calculator
System and Packal         Course Evaluation         Distribution as follows: 20 points for Midterm Practical Exams for the first semester, 2         points for Midterm Practical Exams for the second semester, 10 points for Daily Exams ar         Continuous Assessment, and 50 points for the Final Exam.         Learning and Teaching Resources         Required textbooks (curricular books, if any)         Engineering Drawing Technology((A.W Wander William))MC-Graw-Hill 1977         Main references (sources)			26.Using the ORC
Course EvaluationDistribution as follows: 20 points for Midterm Practical Exams for the first semester, 2points for Midterm Practical Exams for the second semester, 10 points for Daily Exams arContinuous Assessment, and 50 points for the Final Exam.Learning and Teaching ResourcesRequired textbooks (curricular books, if any)Main references (sources)Engineering Drawing Graphic TechnologyFinal ExamFinal ExamContinuous Assessment, and 50 points for the Final Exam.Learning and Teaching ResourcesRequired textbooks (curricular books, if any)Engineering Drawing Technology((A.Wander William))MC-Graw-Hill 1977Main references (sources)Engineering Drawing Graphic Technology			System and Packa
Distribution as follows: 20 points for Midterm Practical Exams for the first semester, 2points for Midterm Practical Exams for the second semester, 10 points for Daily Exams arContinuous Assessment, and 50 points for the Final Exam.Learning and Teaching ResourcesRequired textbooks (curricular books, if any)Main references (sources)Main references (sources)	Course Ev	valuation	
Learning and Teaching Resources         Required textbooks (curricular books, if any)       Engineering Drawing Technology((A.W Wander William))MC-Graw-Hill 1977         Main references (sources)       Engineering Drawing Graphic Techology Frend MC-Graw-Hill 1976	Distribution points for M Continuous	as follows: 20 points for I idterm Practical Exams for Assessment, and 50 points f	Midterm Practical Exams for the first semester, 20 the second semester, 10 points for Daily Exams and for the Final Exam.
Required textbooks (curricular books, if any)Engineering Wander William))MC-Graw-Hill 1977Main references (sources)Engineering Drawing Frend MC-Graw-Hill 1976	Learning a	and Teaching Resources	
Main references (sources) Engineering Drawing Graphic Techolo Frend MC-Graw-Hill 1976	Required text	tbooks (curricular books, if ar	ny) Engineering Drawing Technology((A.W. Wander William))MC-Graw-Hill 1977
	Main references (sources)		Engineering Drawing Graphic Techolog Frend MC-Graw-Hill 1976

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https://zlibrary-asia.se/

https://www.researchgate.net/

Electronic References, Websites

journals, reports...)

Recommended books and references (scientific

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3	4

1								
Course Name:								
Mathen	Mathematic 1							
Co	urse Cod	e:						
E115								
Se	mester /	Year:						
Seme	ster							
De	escription	Preparation Da	te:					
14/0	2/2024							
Av	vailable A	ttendance Forms:						
	Attendan	ce only		~				
Nu	imber of (	Credit Hours (Tot	al) / Number of Unit	s (Total)				
	30 hours	s/2 hour weekly	/2 unit					
Co	ourse adr	ninistrator's nan	ne (mention all, if m	nore than one nar	me)			
	Name: A	li Hassan						
	Email: al	<u>i.hasan@stu.edu</u>	<u>ı.iq</u>					
Co	ourse Obje	ectives						
1-Deve	eloping a fun	damental understandi	ng of the laws and mather	matical issu •				
necessa	ary for solvir	ng simple and comple	x electrical circuits.	•	•••••			
2-Apply	ying theore	tical concepts: Enha	ancing the ability to ap	ply theoret •				
concept	ts in the des	ign and analysis of el	ectronic circuits.					
Те	aching an	d Learning Strate	egies					
1.	Cooperative	e Concept Planning S	trategy.					
2.	Brainstormi	ng Teaching Strategy						
2.	Note-taking	ng Sequence Strategy	•					
5.		g bequence bildlegy.						
Cours	Course Structure							
Week	Hours	Required	Unit or subject	Learning method	Evaluation			
		Learning	name		method			
		Outcomes						
1	2hours	1-Understanding	Matrices Trigonomotric identit	1. Conducting				
2	Zhours	mathematics in	Complex numbers	experiments to buil				
3	2hours	electrical circuits.	Finding the roots of	and test electrical				
4	2hours		complex numbers	circuits. This	Weekly,			
5	2hours	2-Developing	Geometric	enhances theoretic	Monthly, Dai			
6	2hours	critical thinking a	representation of	understanding and	and Written			
	2hours	problem-solving	complex numbers	develops practical	Exams, and			
8	Zhours	Skills uli Ougli		311113.				
9       2hours       circuit analysis at       Exponents and logarithms and their laws       2. Seeking feedback from instructors and peet to identify strength and weaknesses.       Final Term Exam.         11       2hours       Differentiation Polynomial functions and their derivatives Derivative algebra Parametric functions Applications of differentiation Maximum and minimi values       3. Reviewing concepts periodical and applying them new problems to reinforce memory and understanding         15       0       Distance, speed, and acceleration Finding the arc length a curve       4. Using educational softwar and interactive and normal Speed and acceleratio         10       Equation of the tange and normal subtaction as follows: 30 points for midterm theoretical exams, 10 points for daily exams and continuous assessment, and 60 points for the final exam         11       Course Evaluation       Courant, Richard, et al. Introduction to University Press, 2006.         10       Required textbooks (curricular books, if any)       Courant, Richard, et al. Introduction to University Press, 2006.         11       Recommended books and references (scientific journals, reports)       Spivak, Michael. Calculus. Cambri University Press, 2006.         11       Electronic References, Websites       https://zlibrary-asia.se/ https://zlibrary-asia.se/			<b>_</b>					
--	---	--	---	---	--	---	---	--------------------------------
Distance, speed, and acceleration       educational softwal and interactive         Finding the arc length a curve       applications to bett understand concep         Equation of the tange and normal       such as circuit         Speed and acceleration       simulations.         Speed and acceleration       self-research on ne topics in electronic and exploring recerd developments.         Course Evaluation       Evaluation         Distribution as follows: 30 points for midterm theoretical exams, 10 points for daily exams and continuous assessment, and 60 points for the final exam         Learning and Teaching Resources         Required textbooks (curricular books, if any)       Courant, Richard, et al. Introduction to calculus and analysis. Vol. 1. New York: Interscience Publishers, 1965.         Main references (sources)       Spivak, Michael, Calculus. Cambri University Press, 2006.         Recommended books and references (scientific journals, reports)       Bakshi, Uday A. Basic electrical engineer Technical Publications, 2020.         Electronic References, Websites       https://zlibrary-asia.se/         https://zlibrary-asia.se/       https://www.researchgate.net/	9 10 11 12 13 14 15	2hours 2hours 2hours 2hours 2hours 2hours	circuit analysis ar troubleshooting.	Exponents logarithms laws Differentia Polynomia and their d Derivative Parametric Application differentiat Maximum values	and and their tion l functions erivatives algebra functions is of tion and minimu	2. feedba instru to iden and w 3. concep and ap new p reinfo and un 4.	Seeking ack from ctors and pee ntify strength eaknesses. Reviewing pts periodical oplying them roblems to rce memory nderstanding. Using	Final Term Exam.
Course Evaluation         Distribution as follows: 30 points for midterm theoretical exams, 10 points for daily exams and continuous assessment, and 60 points for the final exam         Learning and Teaching Resources         Required textbooks (curricular books, if any)       Courant, Richard, et al. Introduction to calculus and analysis. Vol. 1. New York: Interscience Publishers, 1965.         Main references (sources)       Spivak, Michael. Calculus. Cambri University Press, 2006.         Recommended books and references (scientific journals, reports)       Bakshi, Uday A. Basic electrical engineer Technical Publications, 2020.         Electronic References, Websites       https://zlibrary-asia.se/         https://www.researchgate.net/				Distance, s acceleratio Finding the a curve Equation o and norma Speed and	peed, and n e arc length f the tanger l acceleratio	educat and in applic under such a simula 5. self-re topics and ex develo	tional softwar teractive ations to bett stand concep s circuit ations. Encouraging esearch on ne in electronics sploring recer opments.	
Distribution as follows: 30 points for midterm theoretical exams, 10 points for daily exams and continuous assessment, and 60 points for the final examLearning and Teaching ResourcesRequired textbooks (curricular books, if any)Courant, Richard, et al. Introduction to calculus and analysis. Vol. 1. New York: Interscience Publishers, 1965.Main references (sources)Spivak, Michael. Calculus. Cambri University Press, 2006.Recommended books and references (scientific journals, reports)Bakshi, Uday A. Basic electrical engineer Technical Publications, 2020.Electronic References, Websiteshttps://zlibrary-asia.se/ https://www.researchgate.net/	Cour	se Evalua	ation				-	
Learning and Teaching Resources         Required textbooks (curricular books, if any)       Courant, Richard, et al. Introduction to calculus and analysis. Vol. 1. New York: Interscience Publishers, 1965.         Main references (sources)       Spivak, Michael. Calculus. Cambri University Press, 2006.         Recommended books and references (scientific journals, reports)       Bakshi, Uday A. Basic electrical engineer Technical Publications, 2020.         Electronic References, Websites       https://zlibrary-asia.se/	Distrib and co	oution as fo ntinuous a	ollows: 30 points fo ssessment, and 60	or midterm to points for the points	theoretical ne final exam	exams, m	10 points for	daily exams
Required textbooks (curricular books, if any)       Courant, Richard, et al. Introduction to calculus and analysis. Vol. 1. New York: Interscience Publishers, 1965.         Main references (sources)       Spivak, Michael. Calculus. Cambri University Press, 2006.         Recommended books and references (scientific journals, reports)       Bakshi, Uday A. Basic electrical engineer Technical Publications, 2020.         Electronic References, Websites       https://zlibrary-asia.se/         https://zlibrary-asia.se/       https://www.researchgate.net/	Lear	ning and	Teaching Resour	ces				
Main references (sources)       Spivak, Michael. Calculus. Cambri University Press, 2006.         Recommended books and references (scientific journals, reports)       Bakshi, Uday A. Basic electrical engineer Technical Publications, 2020.         Electronic References, Websites       https://zlibrary-asia.se/         https://www.researchgate.net/	Require	ed textbook	s (curricular books,	if any)	Couran calculus Intersci	t, Richa s and a ence Pu	ard, et al. li analysis. Vol. blishers, 1965.	ntroduction to 1. New York:
Recommended books and references (scientific journals, reports)       Bakshi, Uday A. Basic electrical engineer Technical Publications, 2020.         Electronic References, Websites       https://zlibrary-asia.se/         https://www.researchgate.net/	Main re	eferences (	sources)		Spi Uni	vak, M versitv F	Vichael. Calo Press, 2006.	culus. Cambri
Electronic References, Websites <a href="https://zlibrary-asia.se/">https://zlibrary-asia.se/</a> https://www.researchgate.net/	Recommended books and references (scientific journals, reports)			Bakshi, Uday A. <i>Basic electrical engineer</i> Technical Publications, 2020.		ectrical engineer 20.		
<u>https://zlibrary-asia.se/</u> <u>https://www.researchgate.net/</u>	Electro	nic Referer	, nces, Websites		a 11 a.		• /	
https://www.researchgate.net/					https://zli	ıbrary-	as1a.se/	
					https://w	ww.res	searchgate.ne	<u>et/</u>

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Mathen	natic 2							
Со	urse Cod	e:						
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Se	mester /	Year:						
Seme	ster							
De	scription	Preparation Da	te:					
14/0	2/2024							
Av	vailable A	ttendance Forms:						
	Attendan	ce only						
Nu	umber of (	Credit Hours (Tot	al) / Number of Unit	s (Total)				
	30 hours	s/2 hour weekly	/2 unit					
Co	ourse adr	ninistrator's nan	ne (mention all, if m	ore than one na	me)			
	Name: A	li Hassan						
	Email: al	<u>i.hasan@stu.edu</u>	<u>ı.iq</u>					
Co	ourse Obje	ectives		I				
1-Deve	eloping a fun	damental understandi	ng of the laws and mather	matical issu •				
necessa	ary for solvir	ng simple and complex	x electrical circuits.	•				
2-Apply	ying theore	tical concepts: Enha	ancing the ability to ap	ply theoret •	•••••			
concept	ts in the des	ign and analysis of el	ectronic circuits.					
Те	aching an	d Learning Strate	egies					
1.	Cooperative	e Concept Planning St	trategy.					
2.	Brainstormi	ng Teaching Strategy						
3.	Note-taking	g Sequence Strategy.						
Cours	e Structu	<u>م</u>						
Week	Hours	Required	Unit or subject	Learning method	Evaluation			
		Loarning	namo	g	mothod			
			name		method			
		Outcomes						
1	2hours	1-Understanding	Equation of the tangen	1. Conducting				
2	2hours	the applications o	Calculating changes in	anges in laboratory				
3	2hours	mathematics in	hathematics in voltage and current we experiments to buil					
4	2hours	ciccuicai cii cuito.	Graphing functions	circuits. This	Weekly,			
5	2hours	2-Developing	Maximum and minimu	enhances theoretic	Monthly, Dai			
6	2hours	critical thinking a	limits and inflection	understanding and	and Written			
7	2hours	problem-solving	points	develops practical	Exams, and			
8	2hours	skins through	Asymptotes	SKIIIS.				

9 10 11 12 13 14 15	2hours 2hours 2hours 2hours 2hours	circuit analysis ar troubleshooting.	Limits Integration The relation between in differentiat Definite an integrals Application Revolution Solving diff equations	nship Itegration a tion d indefinite ns of volumes ferential	<ol> <li>Seeking feedback from instructors and to identify stren and weaknesses</li> <li>Reviewin concepts period and applying the new problems to reinforce memo and understand</li> <li>Using educational soft and interactive applications to b understand con- such as circuit simulations.</li> <li>Encourage</li> </ol>	Final Term Exam. pee gth g ical em o ry ing. wai
					self-research on topics in electro and exploring re	ne nic: ecer
Сош	rse Evalua	ation			developments.	
Distrib	oution as fo	ollows: 30 points fo	or midterm	theoretical	exams, 10 points	for daily exams
and co	ntinuous a	ssessment, and 60	points for th	ne final exa	m	
Lear	ning and	Teaching Resour	ces			
Require	ed textbook	ks (curricular books,	if any)	Couran calculus Intersci	t, Richard, et a s and analysis. V ence Publishers, 19	. Introduction to ol. 1. New York: 65.
Main re	eferences (	sources)		Spi Uni	vak, Michael. versity Press, 2006	Calculus. Cambri
Recom	mended b	ooks and reference	s (scientific	Bal	(shi, Uday A. <i>Basic</i>	electrical engineer
journal	s, reports	.)				2020.
Electro	nic Referer	nces, Websites		https://zl	ibrary-asia.se/	
				https://w	ww.researchgat	e.net/

Course Name:

Human Rights and Democracy

Course Code:

E113

Semester / Year:

Semester

Description Preparation Date:

14/02/2024

Available Attendance Forms:

Attendance only

Number of Credit Hours (Total) / Number of Units (Total)

30 hours/2 hour weekly/2 unit

Course administrator's name (mention all, if more than one name) Name: Mohammed Salman

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Email:

**Course Objectives** 

Developing a fundamental understanding of human rights a democracy

## Teaching and Learning Strategies

1. Cooperative Concept Planning Strategy.

2. Brainstorming Teaching Strategy.

3. Note-taking Sequence Strategy.

#### **Course Structure**

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1 2 3 4 5 6 7 8 9	2hours 2hours 2hours 2hours 2hours 2hours 2hours 2hours 2hours	Understanding the basic principles of human rights and democracy	Introduction to human rights Roots of human rights Life in Sumer seven thousand years ago Historical developmen of human rights The position of divine laws on human rights Human rights in ancie civilizations	-Regularly reviewir concepts and apply them to new problems to enhand memory and understanding. -Using educational programs and interactive applications to	Weekly, Monthly, Dai and Written Exams, and Final Term Exam.

10 11 12 13 14 15	2hours 2hours 2hours 2hours 2hours		Political free Islam Types of pu Universal I Human Rig The impact administra corruption rights and s Systematic corruption community Fundament internation human righ Amnesty In Internation of the Red of Arab Chart	eedom in ablic rights Declaration hts of tive on human society remedies f and protection tal al law in hts aternationa al Commit Cross er on Huma	better grasp concep such as circuit simulations. -Encouraging self- research on new topics in human rights and exploring new laws.	
Cou	rse Evalua	ation	0			
Distrib and co	oution as fo ntinuous a	ollows: 30 points fo ssessment, and 60	or midterm ( points for th	theoretical ne final exai	exams, 10 points for m	daily exams
Lear	ning and	Teaching Resour	ces			
Requir	ed textbook	s (curricular books,	if any)			
Main re	eferences (	sources)				
Recom	mended bo	ooks and reference	s (scientific			
journal	journals, reports)					
Electro	nic Referer	nces, Websites		https://zli	ibrary-asia.se/ ww.researchgate.ne	<u>et/</u>

Co	ourse Nan	ne:						
Occup	ational Safe	ty						
Co	ourse Cod	e:						
E114								
Se	mester /	Year:						
Seme	ster							
De	escription	Preparation Da	te:					
14/0	2/2024							
Av	vailable A	ttendance Forms:						
	Attendan	ce only						
Nı	umber of (	Credit Hours (Tot	al) / Number of Unit	s (Total)				
	30 hours	s/2 hour weekly	/2 unit					
Co	ourse adr	ninistrator's nar	ne (mention all, if n	ore than	n one nar	ne)		
	Name: H	anaa abduljabar	abdulrazaq					
	Email: <u>h</u>	anaa.abduljabar	<u>@stu.edu.iq</u>					
Co	ourse Obje	ectives						
Provid	ling a clear	and comprehensiv	ve overview of occupat	tional safe	•	•••••		
its ob	jectives, th	ne reasons behind	it, and the protection	methods	•	•••••		
preven	nt and redu	ce workplace accie	dents		•			
Те	aching an	d Learning Strate	egies					
1.	Cooperative	e Concept Planning S	trategy.					
2.	Brainstormi	ng Teaching Strategy						
3.	Note-taking	Sequence Strategy.						
Cours	se Structu	re						
Week	Hours	Required	Unit or subject	Learning	method	Evaluation		
		Learning	name			method		
		Outcomes						
1	2hours		Occupational safety: it	Regularly	v reviewin			
2	2hours		necessity, objectives,	concepts	and apply			
3	2hours	Understanding	and outcomes	them to r	new			
4	2hours	basic principles	asic principles Occupational safety in problems to enhance					
5	2hours	occupational	terms of its impact on	memory	and nding	Weekly, Monthly Doi		
6	2hours	safety	Maintenance: its	Understa Using ed	nung. ucational	and Written		
7	2hours		objectives and the	program	s and	Exams, and		
8	2hours		importance of prior	interacti	ve	Final Term		
0	2hours		planning	applicati	ons to bett	Exam.		

2hours 2hours 2hours 2hours 2hours		regulations between th Structure of occupation departmen General he occupation programs f protection Health and programs: and prever accidents Firefighting equipment Causes of it accidents Electrical a Chemical h Protective equipment	ce comparis of health an al safety ts alth and al safety for workpla safety specializati tion of traf g and fire ndustrial ccidents azards and person	understand the concepts. Encouraging self- research on new topics in occupation safety and explorin concepts and instructions	
rse Evalua	ation				
bution as fo	ollows: 30 points for	or midterm	theoretical	exams, 10 points for	daily exams
rning and	Teaching Resour	ces	ie iiiai exal		
red textbook	s (curricular books	if any)			
eferences (	sources)				
Recommended books and references (scientific					
ls, reports	.)				
onic Referer	nces, Websites		https://zli	ibrary-asia.se/	at/
	2hours 2hours 2hours 2hours 2hours 2hours rse Evalua bution as for ontinuous a rning and red textbook eferences (in nmended book is, reports pnic References	2hours 2h	2hours       regulations         2hours       between the structure of occupation department General hele occupation programs for protection Health and programs: and prevent accidents         2hours       General hele occupation programs for protection Health and programs: and prevent accidents         Firefighting equipment Causes of in accidents       Electrical at Chemical hele occupation protection Health and programs: and prevent accidents         set evaluation       Electrical at Chemical hele occupation protection as follows: 30 points for midterm for the protective set of the protection set of the protective set of the protection set of the protective set of the protection set of th	2hours       regulations: comparis         2hours       between them         2hours       structure of health and         2hours       occupational safety         2hours       departments         General health and       occupational safety         programs for workpla       protection         Health and safety       programs: specializati         and prevention of trafaccidents       Firefighting and fire         equipment       causes of industrial         accidents       Electrical accidents         Electrical accidents       Electrical hazards         Protective and person       equipment         store and follows: 30 points for midterm theoretical       points for the final examining and Teaching Resources         red textbooks (curricular books, if any)       efferences (sources)         meended books and references (scientific       Is, reports)         proic References, Websites       https://zli	Zhours       regulations: comparis       concepts.         Zhours       between them       Encouraging self-research on new         Zhours       occupational safety       topics in occupation         Zhours       General health and       concepts.         Zhours       General health and       concepts and         Concepts       mew       safety and explorin         Concepts and       concepts and       instructions         protection       Health and safety       programs for workpla         protection       Health and safety       programs: specializati         and prevention of traf       accidents       Firefighting and fire         equipment       Causes of industrial       accidents         Chemical hazards       Protective and person       equipment         bution as follows: 30 points for midterm theoretical exams, 10 points for       minuous assessment, and 60 points for the final exam         rning and Teaching Resources       red textbooks (curricular books, if any)       efferences (sources)         mended books and references (scientific       Is, reports)       https://zlibrary-asia.se/

-	•					
Со	urse Nan	ne:				
English	า					
Со	urse Cod	e:				
E126						
Se	mester /	Year:				
Seme	ster					
De	escription	Preparation Dat	te:			
14/0	2/2024					
Av	vailable A	ttendance Forms:				
	Attendan	ce only				
Nu	umber of (	Credit Hours (Tot	al) / Number of Unit	s (Total)		
	30 hours	s/2 hour weekly	/2 unit			
Co	ourse adr	ninistrator's nan	ne (mention all, if m	nore that	n one nai	me)
	Name: M	lohammed LAIT	Н			
	Email: <u>n</u>	nohammed.laith	<u>@stu.edu.iq</u>			
Co	ourse Obje	ectives				
Teach	ing studen	ts how to construct	sentences in English,	interact w	•	•••••
individ	duals from	n other countries	who speak English,	and prep	•	
studen	its to apply	for government an	d local companies upo	n graduat	•	
Те	aching an	d Learning Strate	egies		I	
1.	Cooperative	e Concept Planning Si	trategy.			
2.	Brainstormi	ng Teaching Strategy				
3.	Note-taking	Sequence Strategy.				
Cours	e Structu	re		I		
Week	Hours	Required	Unit or subject	Learning	g method	Evaluation
		Learning	name			method
		Outcomes				
4				Desclard	· · · ·	
1	2hours	Ability to	Unit 1 ( nello ) Unit 2 ( your world )	Regularly reviewinconcepts and applythem to newproblems to enhanememory andExams, and		
2	2nours	communicate	personal information			
3	2nours	effectively in	family and			
4	2hours	spoken English,	friends			
5	2hours	including clear	The way I live	understa	anding.	Final Term
7	2hours	pronunciation a	Every uay Place Llike			exam.
/   Q	2hours	appropriate	Where I live	Using ed	ucational	
0	2110UI S	vocabulary for	Happy birthday	programs and		

vocabulary for various contexts we had a good time

2hours

9

interactive

10 11 12 13 14 15	2hours 2hours 2hours 2hours	- Ability to understand spoken English i conversations, lectures, and discussions. Writing: Ability write clear and coherent texts, including essays reports, and emails, using proper gramman and punctuation - Ability to re and comprehene variety of tex including articl literature, a technical documents.	we can do i thank you v here and no it's time to Review	it very much ow go	applications to bett understand the concepts	
Cour	se Evalua	ation			·	
Distrib and co Lear	oution as fo ntinuous a ning and	ollows: 30 points fo ssessment, and 60 Teaching Resour	or midterm ( points for th ces	theoretical ne final exa	exams, 10 points for m	daily exams
Require	ed textbook	s (curricular books,	if any)	New He	eadway Beginner - Stud	ent's Book
Main re	eferences (	sources)	,			
Recom	mended bo	ooks and reference	s (scientific			
journal	s, reports	.)				
Electro	nic Referer	nces, Websites		https://zl	ibrary-asia.se/ ww.researchgate.ne	<u>et/</u>

Course Name:

**Computer Fundamentals** 

Course Code:

E127

Semester / Year:

Semester

Description Preparation Date:

14/02/2024

Available Attendance Forms:

Attendance only

Number of Credit Hours (Total) / Number of Units (Total)

30 hours/2 hour weekly/2 unit

#### Course administrator's name (mention all, if more than one name) Name: Ikhlas Bnaie

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Email:

**Course Objectives** 

Teaching students how to use the computer and its application professionally to ensure their qualification for the job market.

## Teaching and Learning Strategies

- 1. Cooperative Concept Planning Strategy.
- 2. Brainstorming Teaching Strategy.
- 3. Note-taking Sequence Strategy.

#### **Course Structure**

Week	Hours	Required Learning	Unit or subject name	Learning method	Evaluation method
		Outcomes			
1	2hours	Understanding t	System software and	Regularly reviewing	<b>TAT 11</b>
2	2hours	basic principles	application programs	concepts and apply	Weekly,
3	2hours	using a compute	Concept of the operation	them to new	Monthly, Dal
4	2hours		System Internal operating	problems to emilant	Fyams and
5	2hours	Learning to use	system commands	understanding	Final Term
6	2hours	essential	Windows operating	under standing.	Exam.
7	2hours	applications for	system		
8	2hours	the job market.	Components of the ma	Using educational	
9	2hours		desktop screen	programs and	
-			Handling desktop icor	interactive	

10 11 12 13 14 15 Cour	2hours 2hours 2hours 2hours 2hours	ation	Familiariza component Computer Utilizing co programs Using the R execute pro Working w program to and retriev Handling th window for Concept of viruses	tion with t s of My ntrol pane UN option ograms ith the Pain create, sav e drawings he Notepad c text writin computer	applications to bett understand the concepts	v exams and
contin	uous asses	sment, and 60 points	its for the fir	al exam	, to points for daily	y exams and
Lear	ning and	Teaching Resour	ces			
Requir	ed textbool	ks (curricular books,	if any)			
Main re	eferences (	sources)				
Recom	mended b	ooks and reference	s (scientific			
journal	s, reports	.)				
Electro	nic Referei	nces, Websites		https://zli	ibrary-asia.se/ ww.researchgate.ne	<u>et/</u>

Course Name:

Electronic circuits 1

Course Code:

E210

Semester / Year:

Semester

Description Preparation Date:

14/02/2024

Available Attendance Forms:

Attendance only

Number of Credit Hours (Total) / Number of Units (Total)

60 hours/4 hour weekly/4

# Course administrator's name (mention all, if more than one name) Name: Hanaa abduljabar

Email: hanaa.abduljabar@stu.edu.iq

## **Course Objectives**

1.	Developing Basic Understanding of Electronics: Enabling students to	•	•••••
underst	and the fundamental principles of electronics, including basic electronic	•	•••••
compor	nents such as resistors, capacitors, and transistors.	•	•••••
2.	Applying Theoretical Concepts: Enhancing the ability to apply theoretic		
concep	ts in the design and analysis of electronic circuits.		
3.	Developing Practical Skills: Providing hands-on training through		
laborate	ory experiments, allowing students to acquire the skills necessary to buil		
and tes	t electronic circuits.		
4.	Information and Communication Technology: Understanding the role of		
electror	nics in information and communication technology and its practical		
applicat	tions.		
5.	Enhancing Critical Thinking: Encouraging students to engage in critical		
analytic	al thinking when solving problems related to electronics.		
Те	aching and Learning Strategies		
1.	Cooperative Concept Planning Strategy.		
2.	Brainstorming Teaching Strategy.		
3.	Note-taking Sequence Strategy.		

## Course Structure

Week	Hours	Required Learning	Unit or subject	Learning method	Evaluation	
		Outcomes	name		method	
1 2 3 4 5 6 7 8 9 10 11 12 13 14	4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours	<ol> <li>Understanding Electronics Application</li> <li>Developing Critical Thinking and Problem-Solving Skill through Circuit Analy and Fault Detection.</li> <li>Ability to Use Electronic Laboratory Tools, such as Multimeters, Signal Generators, and Oscilloscopes.</li> <li>Analyzing Electronic Circuits</li> </ol>	Variable power supply Voltage regulate Thyristor Diac and Triac Applications of silicon rectifiers Oscillators Transistor Operational amplifier Inverting summ circuit and outp equation Non-inverting summing circuit and output equation Examples and applications	<ul> <li>1. Conducting laboratory</li> <li>experiments to bui and test electronic circuits. This enhances theoretic understanding and develops practical skills.</li> <li>2. Seeking feedback from</li> <li>instructors and peet to identify strength and weaknesses.</li> <li>3. Reviewing concepts periodica and applying them new problems to reinforce memory and understanding</li> <li>Using educational softwa and interactive applications to bettunderstand concepts such as circuit simulations.</li> <li>5. Encouraging self-research on net topics in electronic and exploring rece developments.</li> </ul>	Weekly, Monthly, Daily and Written Exams, and Fin Term Exam.	
Cour	se Evalua	ation				
Distrib points Contin	Distribution as follows: 20 points for Midterm Theoretical Exams for the first semester, 20 points for Midterm Practical Exams for the first semester, 10 points for Daily Exams and Continuous Assessment and 50 points for the Final Exam					
Lear	ning and	Teaching Resources				
Require	ed textbook	s (curricular books, if a	ny) Fl Ed	oyd, Thomas L. Electro lucation India, 2005	onic devices. Pear	
Main re	eferences (	sources)	G	upta, J. B. <i>Fundamenta</i> <i>Electronics</i> , SK Kataria	ls Of Electrical Er and Sons, 2009	
Recom journals	mended bo s, reports	oks and references (sci	entific Golds Camb	mith, Andrea. <i>Wireless c</i> ridge university press, 2	communications. 005.	

Electronic References, Websites	https://zlibrary-asia.se/
	https://www.researchgate.net/

Course Name:

Electronic circuits 2

Course Code: E221

Semester / Year:

Semester

Description Preparation Date:

14/02/2024

Available Attendance Forms:

Attendance only

Number of Credit Hours (Total) / Number of Units (Total)

60 hours/4 hour weekly/4

# Course administrator's name (mention all, if more than one name) Name: Hanaa abduljabar

Email: hanaa.abduljabar@stu.edu.iq

## **Course Objectives**

1.	Developing Basic Understanding of Electronics: Enabling students to	• .	
underst	tand the fundamental principles of electronics, including basic electronic	• .	••••
compor	nents such as resistors, capacitors, and transistors.	• .	••••
2.	Applying Theoretical Concepts: Enhancing the ability to apply theoretic		
concep	ts in the design and analysis of electronic circuits.		
3.	Developing Practical Skills: Providing hands-on training through		
laborate	ory experiments, allowing students to acquire the skills necessary to buil		
and tes	st electronic circuits.		
4.	Information and Communication Technology: Understanding the role of		
electror	nics in information and communication technology and its practical		
applica	tions.		
5.	Enhancing Critical Thinking: Encouraging students to engage in critical		
analytic	cal thinking when solving problems related to electronics.		
Те	eaching and Learning Strategies		
1.	Cooperative Concept Planning Strategy.		
2.	Brainstorming Teaching Strategy.		
3.	Note-taking Sequence Strategy.		
Cours	se Structure		

Week	Hours	Required Learning	Unit or su	bject	Learning method	Evaluation
		Outcomes	name			method
1     2     3     4     5     6     7     8     9     10     11     12     13     14	4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours	<ol> <li>Understanding Electronics Application</li> <li>Developing Critical Thinking and Problem-Solving Skill through Circuit Analy and Fault Detection.</li> <li>Ability to Use Electronic Laboratory Tools, such as Multimeters, Signal Generators, and Oscilloscopes.</li> <li>Analyzing Electronic Circuits</li> </ol>	Subtractor and equat subtractir voltages Applicatic operation amplifiers Comparat circuit - w principle Linear app of operati amplifiers Schmitt tr Wave gen using oper amplifiers Monostab multivibra generator Triangle v generator Analog ca Active RC Fabrication integrated for N-type transistor Basic met fabricatin integrated	or circu ions fo ag inpu ons of al or - its orking olicatic onal igger erators rationa ile ator pu vave lculato filters on of ar l circui	1.Conducting laboratoryexperiments to bui and test electronic circuits. This enhances theoretic understanding and develops practical skills.2.Seeking feedback from instructors and peet to identify strength and weaknesses.3.Reviewing concepts periodica and applying them new problems to reinforce memory and understanding 4.4.Using educational softwa and interactive applications to beth understand concep such as circuit simulations.5.Encouraging self-research on ne topics in electronic and exploring receit developments.	Weekly, Monthly, Daily and Written Exams, and Fin Term Exam.
Cour	se Evalua	ation				
Distribution as follows: 20 points for Midterm Theoretical Exams for the first semester, 20 points for Midterm Practical Exams for the first semester, 10 points for Daily Exams and Continuous Assessment, and 50 points for the Final Exam						
Lear	ning and	Teaching Resources	;			
Require	ed textbook	s (curricular books, if a	ny)	Flo Edu	yd, Thomas L. Electro acation India, 2005	onic devices. Pea
Main re	eferences (	sources)		Gu & E	pta, J. B. <i>Fundamental</i> Electronics. SK Kataria	s Of Electrical El and Sons. 2009.
Recom	mended bo	oks and references (sci	ientific	Goldsm Cambri	hith, Andrea. <i>Wireless c</i> dge university press, 20	communications.

Electronic References, Websites	https://zlibrary-asia.se/ https://www.researchgate.net/
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dourse manne.
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Measuring Instruments 1

Course Code:

E214

Semester / Year:

Semester

Description Preparation Date:

14/02/2024

Available Attendance Forms:

Attendance only

Number of Credit Hours (Total) / Number of Units (Total)

60 hours/4 hour weekly/4

# Course administrator's name (mention all, if more than one name) Name: Haider mohammed

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Email: <u>h.m.a.alrudainy@stu.edu.iq</u>

Course O	bjectives
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I-Developing a basic understanding of measuring devices: Enabling	
students to understand the fundamental principles of how measuring	
devices work.	

2-Applying theoretical concepts: Enhancing the ability to apply theoretic

concepts in the design and analysis of measuring device faults.

3-Developing practical skills: Providing hands-on training through laboratory experiments, allowing students to acquire the necessary skills

build and test electronic circuits.

4-Enhancing critical thinking: Encouraging students to think critically and analytically in solving electronics-related problems.

5–Preparing students for the job market: Equipping students with the knowledge and skills required for entering the electronics field in the job market.

6-Promoting lifelong learning: Motivating students to pursue self-learn and skill development in the field of electronics.

#### Teaching and Learning Strategies

- 1. Cooperative Concept Planning Strategy.
- 2. Brainstorming Teaching Strategy.

Course Structure					
Week	Hours	Required Learning	Unit or subject	Learning method	Evaluation
		Outcomes	name		method
1 2 3 4 5 6 7 8 9 10 11 12 13 14	4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours	1.Understanding measuring instrumen 2. Developing Critical Thinking and Probler Solving Skills through Circuit Analysis and Fault Detection. 3. Ability to Use Electronic Laboratory Tools, such as Multimeters, Signal Generators, and Oscilloscopes. 4. Analyzing Electron Circuits	Measurement science Galvanometer Classification of measuring device Moving coil measuring instruments Types of resiston based on their values Micro ohmmeter for measuring insulation DC bridges DC ammeter DC voltmeter Load effect on voltage measurement Wave generator Dual-beam oscilloscope Sensors - importance - typ Temperature sensors LM35 sensor - importance	<ol> <li>Conducting laboratory experiments to but and test electronic circuits. This enhances theoretic understanding and develops practical skills.</li> <li>Seeking feedback from instructors and pe to identify strengtl and weaknesses.</li> <li>Reviewing concepts periodica and applying them new problems to reinforce memory and understanding 4. Using educational softwa and interactive applications to bet understand concepts such as circuit simulations.</li> <li>Encouragin self-research on ne topics in electronic and exploring recent developments.</li> </ol>	Weekly, Monthly, Daily and Written Exams, and Fin Term Exam.
Distrib	oution as fo	ollows: 20 points for M	idterm Theoretic	al Exams for the firs	st semester, 20
points Contin	for Midter	rm Practical Exams for ssment, and 50 points f	the first semest for the Final Exam	er, 10 points for Da 1.	ily Exams and
Lear	ning and	Teaching Resources			
Require	ed textbook	s (curricular books, if a	ny) Flo Edu	yd, Thomas L. Electr ucation India, 2005	onic devices. Pea
Main re	eferences (	sources)	Gu & E	pta, J. B. <i>Fundamenta</i> Electronics. SK Kataria	<i>Is Of Electrical Er</i> and Sons, 2009.

Recommended books and references (scientific journals, reports)	Goldsmith, Andrea. <i>Wireless communications</i> . Cambridge university press, 2005.
Electronic References, Websites	https://zlibrary-asia.se/ https://www.researchgate.net/

Course Name:

Measuring Instruments 2

Course Code:

E225

Semester / Year:

Semester

Description Preparation Date:

14/02/2024

Available Attendance Forms:

Attendance only

Number of Credit Hours (Total) / Number of Units (Total)

60 hours/4 hour weekly/4

# Course administrator's name (mention all, if more than one name) Name: Haider mohammed

Email: <u>h.m.a.alrudainy@stu.edu.iq</u>

Course Objectives	
1-Developing a basic understanding of measuring devices:	•
Enabling students to understand the fundamental principles of	•
how measuring devices work.	•
2-Applying theoretical concepts: Enhancing the ability to apply	
theoretical concepts in the design and analysis of measuring	
device faults.	
3-Developing practical skills: Providing hands-on training	
through laboratory experiments, allowing students to acquire the	
necessary skills to build and test electronic circuits.	
4-Enhancing critical thinking: Encouraging students to think	
critically and analytically in solving electronics-related problem	
5-Preparing students for the job market: Equipping students v	
the knowledge and skills required for entering the electronics	
field in the job market.	
6-Promoting lifelong learning: Motivating students to pursue se	
learning and skill development in the field of electronics.	
Teaching and Learning Strategies	
1. Cooperative Concept Planning Strategy.	

2. Brainstorming Teaching Strategy.

3. Note-taking Sequence Strategy.

#### **Course Structure** Week Hours Required Unit or subject Learning method **Evaluation** Learning method name Outcomes 1.Understanding Arduino – its featur 1. Conducting 1 4hours measuring Light sensors laboratory 2 4hours Atmospheric press, experiments to bui instruments 3 4hours 2. Developing Critic measuring devices and test electronic 4 4hours Thinking and Calibration and circuits. This Weekly, 5 4hours enhances theoretic Monthly, **Problem-Solving** comparison of DC 6 4hours Skills through Circu voltmeter understanding and Daily, and Written 7 Analysis and Fault Measuring amplitude develops practical 4hours Exams, and and frequency with skills. Detection. 8 4hours **Final Term** 2. 3. Ability to Use an oscilloscope Seeking 9 4hours Exam. Electronic Laborate Measuring DC volta feedback from 10 4hours with an oscilloscop instructors and pee Tools. such as 11 4hours Multimeters, Signal Using a signal to identify strength 12 4hours Generators. and generator with an and weaknesses. Oscilloscopes. oscilloscope 3. Reviewing 13 4hours 4. Analyzing Design and analysis concepts periodica 14 4hours **Electronic Circuits** the basic circuit of and applying them signal generator new problems to reinforce memory Power meter and understanding (Wattmeter) Wien bridge for AC 4. Using measure unknown educational softwa and interactive frequency Wien bridge for AC applications to bet measure unknown understand concep such as circuit capacitance Wien bridge for AC simulations. measure inductane 5. Encouraging self-research on ne topics in electronic and exploring recei developments. Course Evaluation Distribution as follows: 20 points for Midterm Theoretical Exams for the first semester, 20 points for Midterm Practical Exams for the first semester, 10 points for Daily Exams and Continuous Assessment, and 50 points for the Final Exam. Learning and Teaching Resources Floyd, Thomas L. Electronic devices. Pearson Educa Required textbooks (curricular books, if any) India, 2005

Main references (sources)	Gupta, J. B. <i>Fundamentals Of Electrical Engg</i> <i>Electronics</i> . SK Kataria and Sons, 2009.
Recommended books and references (scientific journals, reports)	Goldsmith, Andrea. <i>Wireless communications.</i> Cambridge university press, 2005.
Electronic References, Websites	https://zlibrary-asia.se/ https://www.researchgate.net/

Course Name:

Communication 1

Course Code:

E211

Semester / Year:

Semester

Description Preparation Date:

14/02/2024

Available Attendance Forms:

Attendance only

Number of Credit Hours (Total) / Number of Units (Total)

60 hours/4 hour weekly/4

# Course administrator's name (mention all, if more than one name)

Name: Muaad Nasir Email: <u>muaad.nasir@stu.edu.iq</u>

#### **Course Objectives**

1-Developing a basic understanding of communication systems: Enablin	•
students to understand the fundamental principles of how communication	•
system work.	•
2-Applying theoretical concepts: Enhancing the ability to apply theoretic	
concepts in the design and analysis of measuring device faults.	
3-Developing practical skills: Providing hands-on training through	
laboratory experiments, allowing students to acquire the necessary skills	
build and test electronic circuits.	
4-Enhancing critical thinking: Encouraging students to think critically and	
analytically in solving electronics-related problems.	
5-Preparing students for the job market: Equipping students with the	
knowledge and skills required for entering the electronics field in the job	
market.	
6-Promoting lifelong learning: Motivating students to pursue self-learn	
and skill development in the field of electronics.	
Teaching and Learning Strategies	
1. Cooperative Concept Planning Strategy.	

2. Brainstorming Teaching Strategy.

Cours	Course Structure				
Week	Hours	Required Learning	Unit or subject	Learning method	Evaluation
		Outcomes	name		method
1 2 3 4 5 6 7 8 9 10 11 12 13 14	4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours	1.Understanding communication syste 2. Developing Critical Thinking and Probler Solving Skills through Circuit Analysis and Fault Detection. 3. Ability to Use Electronic Laboratory Tools, such as Multimeters, Signal Generators, and Oscilloscopes. 4. Analyzing Electron Circuits	Time and bandwidth Bandpass filter (BPF) High-pass filter (HPF) Low-pass filter (LPF) Band-stop filter (BSF) RC circuit Active filters Types of modulation AM modulation Wave analysis Power distributi in the frequency spectrum Calculating the modulation inde Types of AM and their spectra Modulation type used to generate AM AM detector Distortion in demodulation circuits Envelope detector Automatic gain control (AGC) Synchronous detector FM and PM modulation Mathematical analysis of modulated wave	<ol> <li>Conducting laboratory</li> <li>experiments to bui and test electronic circuits. This</li> <li>enhances theoretic understanding and develops practical skills.</li> <li>Seeking feedback from instructors and peet to identify strength and weaknesses.</li> <li>Reviewing concepts periodica and applying them new problems to reinforce memory and understanding 4. Using educational softwa and interactive applications to bett understand concep such as circuit simulations.</li> <li>Encouraging self-research on ne topics in electronic and exploring received developments.</li> </ol>	Weekly, Monthly, Daily and Written Exams, and Fin Term Exam.

Modulation inde	
and frequency	
deviation	
Frequency	
spectrum width	
FM and PM	
Types of FM	
generation	
Some types of FN	
detectors	
Frequency	
modulation	
applications	

#### **Course Evaluation**

Distribution as follows: 20 points for Midterm Theoretical Exams for the first semester, 20 points for Midterm Practical Exams for the first semester, 10 points for Daily Exams and Continuous Assessment, and 50 points for the Final Exam.

Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Electronic Communication. Dennis -Riddy
Main references (sources)	Principle of communication systems Tual Segilling
Recommended books and references (scientific	Goldsmith, Andrea. <i>Wireless communications</i> . Cambridge university press, 2005.
journals, reports)	
Electronic References, Websites	https://zlibrary-asia.se/

Course Name:

Communication 2

Course Code:

E222

Semester / Year:

Semester

**Description Preparation Date:** 

14/02/2024

Available Attendance Forms:

Attendance only

Number of Credit Hours (Total) / Number of Units (Total)

60 hours/4 hour weekly/4

# Course administrator's name (mention all, if more than one name)

Name: Muaad Nasir Email: <u>muaad.nasir@stu.edu.iq</u>

#### **Course Objectives**

1-Developing a basic understanding of communication systems: Enablin	•			
students to understand the fundamental principles of how communication	•			
system work.	•			
2-Applying theoretical concepts: Enhancing the ability to apply theoretical				
concepts in the design and analysis of measuring device faults.				
3-Developing practical skills: Providing hands-on training through				
laboratory experiments, allowing students to acquire the necessary skills				
build and test electronic circuits.				
4-Enhancing critical thinking: Encouraging students to think critically and				
analytically in solving electronics-related problems.				
5-Preparing students for the job market: Equipping students with the				
nowledge and skills required for entering the electronics field in the job				
market.				
6-Promoting lifelong learning: Motivating students to pursue self-learn				
and skill development in the field of electronics.				
Teaching and Learning Strategies				
1. Cooperative Concept Planning Strategy.				

2. Brainstorming Teaching Strategy.

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1     2     3     4     5     6     7     8     9     10     11     12     13     14	4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours	1.Understanding communication syste 2. Developing Critical Thinking and Probler Solving Skills through Circuit Analysis and Fault Detection. 3. Ability to Use Electronic Laboratory Tools, such as Multimeters, Signal Generators, and Oscilloscopes. 4. Analyzing Electron Circuits	Pulse Modulatio (PAM) Pulse Modulatio PWM-PDM) Pulse Modulatio (PPM) Amplitude Shift Keying (ASK) - BASK Frequency Shift Keying – FSK – Phase Shift Keyi (PSK) Coding-Samplin Quantization- coding transforr Digital Modulati PCM Digital Modulati DPCM Digital Modulati DPCM Digital Modulati DM Mobile- introduction- principles- technics-wireles technics GSM-functions- structure. Mobile-FDMA- TDMA-CDMA.	<ol> <li>Conducting laboratory</li> <li>experiments to bui and test electronic</li> <li>circuits. This</li> <li>enhances theoretic</li> <li>understanding and</li> <li>develops practical</li> <li>skills.</li> <li>Seeking</li> <li>feedback from</li> <li>instructors and peet</li> <li>to identify strength</li> <li>and weaknesses.</li> <li>Reviewing</li> <li>concepts periodica</li> <li>and applying them</li> <li>new problems to</li> <li>reinforce memory</li> <li>and understanding</li> <li>Using</li> <li>educational softwa</li> <li>and interactive</li> <li>applications to bett</li> <li>understand conception</li> <li>simulations.</li> <li>Encouraging</li> <li>self-research on ne</li> <li>topics in electronic</li> <li>and exploring receit</li> <li>developments.</li> </ol>	Weekly, Monthly, Dail and Written Exams, and F Term Exam.
Distribution as follows: 20 points for Midterm Theoretical Exams for the first semester, 20 points for Midterm Practical Exams for the first semester, 10 points for Daily Exams and Continuous Assessment, and 50 points for the Final Exam.					
Lear	ning and	Teaching Resources	· · ·		<u> </u>
Require	ed textbook	s (curricular books, if an	אר (ער	ectronic Communication	. Dennis -Riddy
Main re	eferences (	sources)	Pr	inciple of communication	on systems Tua

Recommended books and references (scientific journals, reports)	Goldsmith, Andrea. <i>Wireless communications</i> . Cambridge university press, 2005.
Electronic References, Websites	https://zlibrary-asia.se/ https://www.researchgate.net/

Course Name:

Fiber optics1

Course Code:

E213

Semester / Year:

Semester

**Description Preparation Date:** 

14/02/2024

Available Attendance Forms:

Attendance only

Number of Credit Hours (Total) / Number of Units (Total)

60 hours/4 hour weekly/4

Course administrator's name (mention all, if more than one name) Name: Ahmed sabri

Email: ahmid.sbri@stu.edu.iq

#### Course Objectives

1-Developing a basic understanding of communication systems: Enablir • . . . . . students to understand the fundamental principles of how communication . . . . . system work. 2-Applying theoretical concepts: Enhancing the ability to apply theoretic concepts in the design and analysis of measuring device faults. 3-Developing practical skills: Providing hands-on training through laboratory experiments, allowing students to acquire the necessary skills build and test electronic circuits. 4–Enhancing critical thinking: Encouraging students to think critically and analytically in solving electronics-related problems. 5-Preparing students for the job market: Equipping students with the knowledge and skills required for entering the electronics field in the job market. 6-Promoting lifelong learning: Motivating students to pursue self-learn and skill development in the field of electronics. Teaching and Learning Strategies 1. Cooperative Concept Planning Strategy.

2. Brainstorming Teaching Strategy.

Course Structure					
Week	Hours	Required Learning	Unit or subject	Learning method	Evaluation
		Outcomes	name		method
1 2 3 4 5 6 7 8 9 10 11 12 13 14	4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours	1.Understanding communication syste 2. Developing Critical Thinking and Probler Solving Skills through Circuit Analysis and Fault Detection. 3. Ability to Use Electronic Laboratory Tools, such as Multimeters, Signal Generators, and Oscilloscopes. 4. Analyzing Electron Circuits	Course methodology Twisted pair cab and their types, coaxial cables ar their types Basic parameter of transmission lines Applications of transmission lin Introduction to optical fibers and their types Advantages, disadvantages, a applications of optical fibers Basics of optical fibers, Snell's firs and second law Propagation mod in optical fibers Types of optical fibers Practical specifications of optical fibers Transmission characteristics over optical fibe	<ol> <li>Conducting laboratory</li> <li>experiments to bui and test electronic</li> <li>circuits. This</li> <li>enhances theoretic</li> <li>understanding and develops practical skills.</li> <li>Seeking</li> <li>feedback from</li> <li>instructors and peet</li> <li>to identify strength</li> <li>and weaknesses.</li> <li>Reviewing</li> <li>concepts periodica</li> <li>and applying them</li> <li>new problems to</li> <li>reinforce memory</li> <li>and understanding</li> <li>Using</li> <li>educational softwa</li> <li>and interactive</li> <li>applications to bett</li> <li>understand concep</li> <li>such as circuit</li> <li>simulations.</li> <li>Encouraging</li> <li>self-research on ne</li> <li>topics in electronic</li> <li>and exploring receit</li> <li>developments.</li> </ol>	Weekly, Monthly, Daily and Written Exams, and Fi Term Exam.
Distrib	oution as fo	llows: 20 points for M	idterm Theoretic	al Exams for the firs	t semester, 20
Continuous Assessment, and 50 points for the Final Exam.					
Learning and Teaching Resources					
Require	ed textbook	s (curricular books, if a	ny) Ele	ectronic Communication	. Dennis -Riddy
Main re	eferences (	sources)	Pri Se	nciple of communicati gilling	on systems Tual

Recommended books and references (scientific journals, reports)	Goldsmith, Andrea. <i>Wireless communications</i> . Cambridge university press, 2005.
Electronic References, Websites	https://zlibrary-asia.se/ https://www.researchgate.net/

Course Name:

Fiber optics2

Course Code:

E224

Semester / Year:

Semester

Description Preparation Date:

14/02/2024

Available Attendance Forms:

Attendance only

Number of Credit Hours (Total) / Number of Units (Total)

60 hours/4 hour weekly/4

Course administrator's name (mention all, if more than one name) Name: Ahmed sabri

Email: ahmid.sbri@stu.edu.iq

## Course Objectives

1-Developing a basic understanding of communication systems: Enablin	•
students to understand the fundamental principles of how communication	•
system work.	•
2-Applying theoretical concepts: Enhancing the ability to apply theoretical	
concepts in the design and analysis of measuring device faults.	
3-Developing practical skills: Providing hands-on training through	
laboratory experiments, allowing students to acquire the necessary skills	
build and test electronic circuits.	
4-Enhancing critical thinking: Encouraging students to think critically and	
analytically in solving electronics-related problems.	
5-Preparing students for the job market: Equipping students with the	
knowledge and skills required for entering the electronics field in the job	
market.	
6-Promoting lifelong learning: Motivating students to pursue self-learn	
and skill development in the field of electronics.	
Teaching and Learning Strategies	
1. Cooperative Concept Planning Strategy.	

2. Brainstorming Teaching Strategy.

Cours	Course Structure				
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
$     1 \\     2 \\     3 \\     4 \\     5 \\     6 \\     7 \\     8 \\     9 \\     10 \\     11 \\     12 \\     13 \\     14 \\     14 $	4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours	1.Understanding fibe optics principles 2. Developing Critical Thinking and Probler Solving Skills through Circuit Analysis and Fault Detection. 3. Ability to Use Electronic Laboratory Tools, such as Multimeters, Signal Generators, and Oscilloscopes. 4. Analyzing Electron Circuits	Course methodology Twisted pair cab and their types, coaxial cables ar their types Basic parameter of transmission lines Applications of transmission lin Introduction to optical fibers and their types Advantages, disadvantages, disadvantages, applications of optical fibers Basics of optical fibers, Snell's fir and second law Propagation mod in optical fibers Types of optical fibers Practical specifications of optical fibers Transmission characteristics over optical fibe	1.Conducting laboratoryexperiments to bui and test fiber opticThis enhances theoretical understanding and develops practical skills.2.Seeking feedback from instructors and peet to identify strength and weaknesses.3.Reviewing concepts periodica and applying them new problems to reinforce memory and understanding 4.4.Using educational softwa and interactive applications to bett understand concep such as circuit simulations.5.Encouraging self-research on ne topics in electronic and exploring receit developments.	Weekly, Monthly, Daily and Written Exams, and Fi Term Exam.
Distribution as follows: 20 points for Midterm Theoretical Exams for the first semester, 20					
points for Midterm Practical Exams for the first semester, 10 points for Daily Exams and Continuous Assessment, and 50 points for the Final Exam.					
Learning and Teaching Resources					
Require	ed textbook	s (curricular books, if a	ny) Ele	ectronic Communication	. Dennis -Riddy
Main re	eferences (	sources)	Pri	nciple of communication gilling	on systems Tual

Recommended books and references (scientific journals, reports)	Goldsmith, Andrea. <i>Wireless communications</i> . Cambridge university press, 2005.
Electronic References, Websites	https://zlibrary-asia.se/ https://www.researchgate.net/

Course Name:

Microwave1

Course Code:

E212

Semester / Year:

Semester

Description Preparation Date:

14/02/2024

Available Attendance Forms:

Attendance only

Number of Credit Hours (Total) / Number of Units (Total)

60 hours/4 hour weekly/4

## Course administrator's name (mention all, if more than one name) Name: Kamil Auda

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Email: kamilaudah@stu.edu.iq

#### **Course Objectives**

1-Developing a basic understanding of microwave systems: Enabling
 students to understand the fundamental principles of how microwave
 system work.
 2-Applying theoretical concepts: Enhancing the ability to apply theoretica concepts in the design and analysis of measuring device faults.
 3-Developing practical skills: Providing hands-on training through

laboratory experiments, allowing students to acquire the necessary skills build and test electronic circuits.

4-Enhancing critical thinking: Encouraging students to think critically and analytically in solving electronics-related problems.

5-Preparing students for the job market: Equipping students with the knowledge and skills required for entering the electronics field in the job market.

6-Promoting lifelong learning: Motivating students to pursue self-learn and skill development in the field of electronics.

## Teaching and Learning Strategies

- 1. Cooperative Concept Planning Strategy.
- 2. Brainstorming Teaching Strategy.
3.

Note-taking Sequence Strategy.

Course Structure							
Week	Hours	e Required Learning Outcomes	Unit or s name	ubject	Learning me	ethod	Evaluation method
$     \begin{array}{r}       1 \\       2 \\       3 \\       4 \\       5 \\       6 \\       7 \\       8 \\       9 \\       10 \\       11 \\       12 \\       13 \\       14 \\     \end{array} $	4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours	1.Understanding micrwave system 2. Developing Critica Thinking and Proble Solving Skills throug Circuit Analysis and Fault Detection. 3. Ability to Use Electronic Laborator Tools, such as Multimeters, Signal Generators, and Oscilloscopes. 4. Analyzing Electron Circuits	Introduc microwa Microwa their app Wavegui Types of wavegui Smith ch Wave pro- in transm lines Practical Microwa Fresnel z Electrom waves Optical p electrom waves Propagat uniform flat surfa Microwa and gene Satellite commun	tion to ves ves and dications de des art opagation hission example ve paths cone lagnetic roperties agnetic cion of plane icular e of waves or ces ve valves prators ication	<ol> <li>Cond laboratory of microwave s This enhance theoretical understandid develops pra- skills.</li> <li>Seeki feedback from instructors a to identify st and weakne 3. Revie concepts per and applying new problem reinforce me and underst 4. Using educational and interact applications understand such as circu simulations.</li> <li>Encoo self-research topics in ele- and exploring</li> </ol>	ucting system es ng and actical ing om and pee trength sses. ewing riodica g them ns to emory anding g softwa ive to bett concep uit uraging h on ne ctronic ng recei	Weekly, Monthly, Daily and Written Exams, and Fi Term Exam.
Cour Distrib points Contin	se Evalua oution as fo for Midter uous Asses	ation Ilows: 20 points for M rm Practical Exams fo ssment, and 50 points	Aidterm T or the first for the Fir	heoretica t semeste nal Exam	ll Exams for t er, 10 points	he first for Dai	semester, 20 ly Exams and
Lear	ning and	Teaching Resources	S				
Required textbooks (curricular books, if any) Electronic Communication. Dennis -Riddy						. Dennis -Riddy	
Main re	Main references (sources) Principle of communication systems Tua Segilling						

72

Recommended books and references (scientific journals, reports)	Goldsmith, Andrea. <i>Wireless communications</i> . Cambridge university press, 2005.
Electronic References, Websites	https://zlibrary-asia.se/ https://www.researchgate.net/

## **Course Description Form**

Course Name:

Microwave2

Course Code:

E223

Semester / Year:

Semester

Description Preparation Date:

14/02/2024

Available Attendance Forms:

Attendance only

Number of Credit Hours (Total) / Number of Units (Total)

60 hours/4 hour weekly/4

## Course administrator's name (mention all, if more than one name) Name: Kamil Auda

. . . . .

. . . . .

Email: kamilaudah@stu.edu.iq

## **Course Objectives**

1-Developing a basic understanding of microwave systems: Enabling
 students to understand the fundamental principles of how microwave
 system work.

2-Applying theoretical concepts: Enhancing the ability to apply theoretical concepts in the design and analysis of measuring device faults.

3-Developing practical skills: Providing hands-on training through laboratory experiments, allowing students to acquire the necessary skills

build and test electronic circuits.

4-Enhancing critical thinking: Encouraging students to think critically and analytically in solving electronics-related problems.

5–Preparing students for the job market: Equipping students with the knowledge and skills required for entering the electronics field in the job market.

6-Promoting lifelong learning: Motivating students to pursue self-learn and skill development in the field of electronics.

## Teaching and Learning Strategies

- 1. Cooperative Concept Planning Strategy.
- 2. Brainstorming Teaching Strategy.

3.

Note-taking Sequence Strategy.

Week	Hours	Required Learning	Unit or subject	Learning method	Evaluation
Week	nours	Outcomes			method
		Outcomes	name		metnoa
1 2 3 4 5 6 7 8 9 10 11 12 13 14	4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours	1.Understanding micrwave system 2. Developing Critica Thinking and Proble Solving Skills throug Circuit Analysis and Fault Detection. 3. Ability to Use Electronic Laborator Tools, such as Multimeters, Signal Generators, and Oscilloscopes. 4. Analyzing Electro Circuits	Generations of satellite communications Types of services using satellites Impact of satellite orbits Calculating transmission power to noise power rat Modulation and multiplexing techniques Components of satellite communication systems Satellite systems Applications of satellite communications and telephone Radio Radio and televisi broadcasting Data and internet communications VSAT system Evolution of the G system	<ol> <li>Conducting laboratory on microwave system This enhances theoretical understanding and develops practical skills.</li> <li>Seeking feedback from instructors and peet to identify strength and weaknesses.</li> <li>Reviewing concepts periodica and applying them new problems to reinforce memory and understanding 4. Using educational softwa and interactive applications to bettunderstand concep such as circuit simulations.</li> <li>Encouraging self-research on ne topics in electronic and exploring recent developments.</li> </ol>	Weekly, Monthly, Dail and Written Exams, and F Term Exam.
Distrib	oution as fo	llows: 20 points for N	Aidterm Theoretica	al Exams for the first	semester, 20
points Contin	for Midter uous Asses	rm Practical Exams for sament, and 50 points	or the first semeste for the Final Exam	er, 10 points for Dai	ly Exams and
Lear	ning and	Teaching Resource	S		
Required textbooks (curricular books, if any) Electronic Communication. Dennis -Riddy					. Dennis -Riddy
Main re	eferences (s	sources)	Pri	nciple of communication	on systems Tua

Recommended books and references (scientific journals, reports)	Goldsmith, Andrea. <i>Wireless communications</i> . Cambridge university press, 2005.
Electronic References, Websites	https://zlibrary-asia.se/ https://www.researchgate.net/