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

Academic Program and Course Description Guide

2024

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:

Academic Program Description: 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.

Course Description: 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.

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

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

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

Curriculum Structure: 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.

Teaching and learning strategies: 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. AbdulNasser AbdulJabbar Abbood

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

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

7. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
			theoretical	practical
2023-2024/First	E110	**Electronic1**	**2**	**2**
2023-2024/First	E111	**Electrical Circuits and Measurements**	**2**	**2**
2023-2024/First	E112	**Digital Circuits 1**	**2**	**2**
2023-2024/First	E113	**Human Rights and Democracy**	**2**	
2023-2024/First	E114	**Occupational Safety**	**2**	
2023-2024/First	E115	**Mathematics 1**	**2**	
2023-2024/First	E121	**Electronics 2**	**2**	**2**

2023-2024/First	E122	Electrical Circuits and Measurements 2	2	2
2023-2024/First	E123	Digital Circuits 2	2	2
2023-2024/First	E124	Mathematics 2	2	
2023-2024/First	E125	Engineering and Electrical Drawing		3
2023-2024/First	E126	English Language	2	
2023-2024/First	E127	Computer Fundamentals		2
2023-2024/First	E128	Workshops		4
2023-2024/Second	E210	Electronic Circuits 1	2	2
2023-2024/Second	E211	Communications 1	2	2
2023-2024/Second	E212	Microwaves 1	2	2
2023-2024/Second	E213	Optical Fibers 1	2	2
2023-2024/Second	E214	Measuring Instruments 1	2	2
2023-2024/Second	E215	Computer Fundamentals		2
2023-2024/Second	E216	English Language	2	
2023-2024/Second	E217	PLC	1	2
2023-2024/Second	E218	Crimes of the Ba'ath Regime in Iraq	2	
2023-2024/Second	E221	Electronic Circuits 2	2	2
2023-2024/Second	E222	Communications 2	2	2
2023-2024/Second	E223	Microwaves 2	2	2
2023-2024/Second	E224	Optical Fibers 2	2	2
Measuring Instruments 2	E225	Measuring Instruments 2	2	2
Electronic Devices Maintenance Workshop	E226	Electronic Devices Maintenance Workshop		4
Data Transmission and Wireless Networks	E227		1	2

Graduation Project	E228			**2**

8. Expected learning outcomes of the program

Knowledge	
1. **Understanding the Basics of Electronics**: Knowledge of the theories and fundamental principles of electronics. 2. **Operation and Maintenance of Devices**: 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. **Laboratory Software and Techniques**: Using laboratory software and equipment to conduct experiments. 6. **Teamwork Skills**: 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. **Circuit Analysis**: The ability to design and analyze electronic circuits. 3. **Programming**: Basic programming skills for developing electronics-related applications. 4. **Troubleshooting**: The ability to diagnose and repair faults in electronic systems. 5. **Communication Technology**: Understanding modern communication technologies and their applications. 6. **Project Management**: Skills in managing time and resources in technical projects.	
Ethics	
1. **Professional Ethics**: Commitment to the highest standards of professional and ethical conduct, including respect for intellectual property. 2. **Innovation**: Encouraging creative thinking and innovation in technical solutions. 3. **Accountability**: Taking responsibility for professional actions and decisions.	Learning Outcomes Statement 4

4. **Respect for Teamwork**: Appreciating the importance of teamwork and collaboration with others. 5. **Continuous Learning**: Commitment to updating skills and knowledge in the field of technology. 6. **Quality and Excellence**: Striving to achieve quality standards and excellence 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	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Dr. Haidar Mohammed Dawood (lecturer)	Electrical	Electronic			Staff	
Dr. Abdul Nasir Abdul Jabbar (lecturer)	Electrical	Communication			Staff	
Dr. Mohammed Kazem Khudhair (lecturer)	Electrical	Communication			Staff	
Ahmed Sabri Kazem (Assistance lecturer)	Electrical	Communication			Staff	
Hana Abdul Jabbar Abdul (lecturer)	Electrical	Electrical			Staff	
Haidar Hassan Ali (Assistance lecturer)	Electrical	Electrical			Staff	
Khalid Kazem Saleh(Assistance lecturer)	Architect	Architect			Staff	
Muwafaq Jameel Saleh(Assistance lecturer)	Electrical	power			Staff	
Kamel Awda Kareem (Assistance lecturer)	Electrical	Communication			Staff	
Alaa abdulhassan (Assistance lecturer)	Physics	Physics			Staff	

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.

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
2023-2024/First	E110	Electronic1	Basic	✓					✓				✓		
	E121	Electronic2	Basic	✓					✓			✓			
2023-2024/First	E111	Electrical Circuits Measurements1	Basic		✓			✓				✓			
	E122	Electrical Circuits Measurements2	Basic		✓			✓					✓		
2023-2024/First	E112	Digital Circuits 1	Basic				✓			✓					
	E123	Digital Circuits 2	Basic				✓			✓					
2023-2024/Second	E211	Communication1	Basic			✓		✓					✓		
	E222	Communication2	Basic			✓		✓					✓		

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 Instruments1**	**Basic**	✓				✓							
2023-2024/Second	E214	**Measuring Instruments2**	**Basic**	✓				✓							
2023-2024/Second	E226	**Electronic Devices Maintenance Workshop**	**Basic**				✓			✓		✓			
2023-2024/Second	E210	**Electronic circuit1**	**Basic**		✓				✓						
2023-2024/Second	E221	**Electronic circuit2**	**Basic**		✓				✓						

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

Course Description Form

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: alaa.abdulhussain@stu.edu.iq	
8. Course Objectives	
1. Developing Basic Understanding of Electronics: Enabling students to understand the fundamental principles of electronics, including basic electronic components such as resistors, capacitors, and transistors. 2. Applying Theoretical Concepts: Enhancing the ability to apply theoretic 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 buil and test electronic circuits. 4. Information and Communication Technology: Understanding the role of electronics 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.	• ..... • ..... • .....
9. Teaching and Learning Strategies	
1. Cooperative Concept Planning Strategy. 2. Brainstorming Teaching Strategy. 3. Note-taking Sequence Strategy.	
10. 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	4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours	1. Understanding Electronics Applicatio 2. Developing Critical Thinking and Problem-Solving Skill through Circuit Analy and Fault Detection. 3. Ability to Use Electronic Laboratory Tools, such as Multimeters, Signal Generators, and Oscilloscopes. 4. Analyzing Electronic Circuits	1. Diode Characteristics Forward Bias 2. Diode Characteristics Reverse Bias 3. Half-Wav Rectifier 4. Full-Wave Rectifier (Cent Tapped) 5. Full-Wave Rectifier Using Center-Tapped Transformer 6. Half-Wav Rectifier 7. Full-Wave Rectifier with Filter and RL Filt 8. Clipping Circuits 9. DC Volta Doubler Circuits 10. Zener Dio - Characteristics 11. Using Zer Diode 12. Common-Base Transis Characteristics 13. Common-Emitter Transis Characteristics 14. Common-Base Amplifier	1. Conducting laboratory experiments to bui and test electronic circuits. This enhances theoretic understanding and develops practical skills. 2. Seeking feedback from instructors and pee to identify strength and weaknesses. 3. 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. 5. Encouraging self-research on ne topics in electronic and exploring rece developments.	Weekly, Monthly, Daily and Written Exams, and Fi Term Exam.

11. 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.

12. 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 Er & Electronics*. SK Kataria and Sons, 2009.

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

Course Description Form

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 understand the fundamental principles of electronics, including basic electronic components such as resistors, capacitors, and transistors. 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 electronics 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 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 4hours 4hours	1. Understanding Electronics Applicatio 2. Developing Critical Thinking and Problem-Solving Skill through Circuit Analy and Fault Detection. 3. Ability to Use Electronic Laboratory Tools, such as Multimeters, Signal Generators, and Oscilloscopes. 4. Analyzing Electronic Circuits	1.Common Emitter Amplifier 2.Common Collector Amplifier 3.Common Source Amplifier 4.Measuring H-Parameters 5.Using the Transist in Voltage Regulatio 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 12.Using Thyristor - Its Characteristics - Phase Angle Control 13.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 Differe Between Them	1. Conducting laboratory experiments to bui and test electronic circuits. This enhances theoretic understanding and develops practical skills. 2. Seeking feedback from instructors and pee to identify strength and weaknesses. 3. 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. 5. Encouraging self-research on ne topics in electronic and exploring rece developments.	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)	Floyd, Thomas L. Electronic devices. Pear Education India, 2005
Main references (sources)	Gupta, J. B. *Fundamentals Of Electrical Engg Electronics*. SK Kataria and Sons, 2009.
Recommended books and references (scientific journals, reports…)	Goldsmith, Andrea. *Wireless communications*. Cambridge university press, 2005.
Electronic References, Websites	https://zlibrary-asia.se/ https://www.researchgate.net/

Course Description Form

Course Name:	
Digital circuit1	
Course Code:	
E112	
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 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 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 4hours 4hours	1. Understanding digital circuits Applications 2. Developing Critical Thinking and Problem-Solving Skill through Circuit Analy and Fault Detection. 3. Ability to Use Electronic Laboratory Tools, such as Multimeters, Signal Generators, and Oscilloscopes. 4. Analyzing Electronic Circuits	1. Number System 2.Binary System 3.Decimal System 4.Hexadecimal System 5.Conversion from Binary to Decimal 6.Logic Gates 7.Representation o Logic Gates 8.Boolean Algebra 9.De Morgan's Theorems 10.Karnaugh Map 11.Karnaugh Map Three Variables 12.Karnaugh Map Four Variables 13.Digital Comparator 14.Two-Level Comparator 15.Codebreaker 16.Encoding 17.Decimal to Bin Encoding	1. Conducting laboratory experiments to bui and test digital circuits. This enhances theoretic understanding and develops practical skills. 2. Seeking feedback from instructors and pee to identify strength and weaknesses. 3. 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. 5. Encouragin self-research on ne topics in electronic and exploring rece developments.	Weekly, Monthly, Dail and Written Exams, and Final Term Exam.

Course Evaluation
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Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Holdsworth, Brian, and Clive Woods. Digital logic design. Elsevier, 2002.
Main references (sources)	Alam, Mansaf, and Bashir Alam. *Digital Lo Design*. PHI Learning Pvt. Ltd., 2015.

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

Course Description Form

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 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 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 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 4hours 4hours	1. Understanding digital circuits Applications 2. Developing Critical Thinking and Problem-Solving Skill through Circuit Analy and Fault Detection. 3. Ability to Use Electronic Laboratory Tools, such as Multimeters, Signal Generators, and Oscilloscopes. 4. Analyzing Electronic Circuits	1.Common Emitter Amplifier 2.Common Collector Amplifier 3.Common Source Amplifier 4.Measuring H-Parameters 5.Using the Transist in Voltage Regulatio 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	1. Conducting laboratory experiments to bui and test digital circuits. This enhances theoretic understanding and develops practical skills. 2. Seeking feedback from instructors and pee to identify strength and weaknesses. 3. 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. 5. Encouraging self-research on ne topics in electronic and exploring rece developments.	Weekly, Monthly, Dai and Written Exams, and Final Term Exam.

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Recommended books and references (scientific journals, reports…)	Dally, William James, and R. Cu Harting. *Digital design: a systems approa* Cambridge University Press, 2012.

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

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 one name)
Name: Haider Hassan Email: haider.hasan@stu.edu.iq
Course Objectives

1. Developing Basic Understanding of electrical circuits: Enabling students t 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 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 4hours 4hours	1. Understanding electrical circuits theorem 2. Developing Critical Thinking and Problem-Solving Skill through Circuit Analy and Fault Detection. 3. Ability to Use Electrical Laboratory Tools, such as Multimeters, Signal Generators, and Oscilloscopes. 4. Analyzing electrical Circuits	1.Units System Use 2.Direct Current Circuits 3.Series and Parall Circuits 4.Kirchhoff's Laws 5.Maxwell's Law 6.Thevenin's Theorem 7.Norton's Theore 8.Superposition Theorem 9.Alternating Quantities 10.Phase Angle an How to Calculate I 11.Effect of Alternating Curren on Resistance, Inductance, and Capacitance 12.Resistance and Inductance 13.Resistance and Capacitance 14.Resistance, Inductance, and Capacitance 15.Total Impedanc 16.Resonance Circuits	1. Conducting laboratory experiments to bui and test electrical circuits. This enhances theoretic understanding and develops practical skills. 2. Seeking feedback from instructors and pee to identify strength and weaknesses. 3. 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. 5. Encouraging self-research on ne topics in electronic and exploring recer developments.	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." *(No Title)* (1977).
Main references (sources)	Svoboda, James A., and Richard Dorf. *Introduction to electric circuits*. J Wiley & Sons, 2013.

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/

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 one name)
Name: Haider Hassan Email: haider.hasan@stu.edu.iq
Course Objectives

1. Developing Basic Understanding of electrical circuits: Enabling students t 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 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 4hours 4hours	1. Understanding electrical circuits theorem 2. Developing Critical Thinking and Problem-Solving Skill through Circuit Analy and Fault Detection. 3. Ability to Use Electrical Laboratory Tools, such as Multimeters, Signal Generators, and Oscilloscopes. 4. Analyzing electrical Circuits	1.Series Resonanc and Parallel Resonance 2.Norton's and Thevenin's Theorems 3.Power in Alternating Curren Circuits 4.Total Apparent Power 5.Maximum Powe Transfer Theorem 6.Analyzing Electrical Network Using Node Voltag Method 7.Three-Phase Alternating Curren Circuits 8.Phase Power 9.Practical Exampl 10.Measuring Pow for Three-Phase Loads 11.Transient State in Circuits 12.Transient AC Currents 13.Self-Inductance the Coil 14.Transformers	1. Conducting laboratory experiments to bui and test electrical circuits. This enhances theoretic understanding and develops practical skills. 2. Seeking feedback from instructors and pee to identify strength and weaknesses. 3. 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. 5. Encouragin self-research on ne topics in electronic and exploring rece developments.	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." *(No Title)* (1977).
Main references (sources)	Svoboda, James A., and Richard Dorf. *Introduction to electric circuits*. J Wiley & Sons, 2013.

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/

Course Description Form

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 Email: khalid.kadhem@stu.edu.iq

Course Objectives	
Training students on the correct principles of engineering drawing, electro and 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 Outcomes	Unit or subject name	Learning method	Evaluation method
1 2 3 4 5 6 7 8 9	4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours	1.Understanding the Basic Principles of Engineering and Electrical Drawing 2.Developing Critical Thinking and Problem Solving Skills through Circuit Drawing and Fault Detection	1.Importance of Engineering and Industrial Drawing 2.Drawing Types o Lines 3.Set of Simple Geometric Shapes 4.Explanation of Electrical and Electronic Symbol	1.Conducting laboratory experiments to bui digital circuits. This enhances theoretic understanding and develops practical skills. 2.Seeking feedback from instructors an peers to identify	Weekly, Monthly, Dail and Written Exams, and Final Term Exam.

10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	4hours 4hours	3.Ability to Use Required Drawing Tools 4.Ability to Read a Analyze Techni Drawings	5.Drawing a Panel Electrical and Electronic Symbol 6.Writing Latin Letters and Numb 7.How to Distribut and Install Measuring Instruments 8.Geometric Operations 9.Drawing Tangen to a Circle 10.Line Tangent to Two Given Circles 11.Drawing a Regular Polygon 12.Electrical Installations 13.Drawing a Pane for Complete Connections of a Fluorescent Tube 14.Drawing a Pane for Electronic Connections 15.Drawing the So Shape 16.Explaining How to Dimension Drawings Geometrically 17.Drawing Compl 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 Three Projections 22.Sections in Objects	strengths and weaknesses. 3.Reviewing concep periodically and applying them to n problems to reinfo memory and understanding. 4.Using educationa software and interactive applications to bett understand concep such as circuit simulations. 5.Encouraging self- research on new topics in electronic and exploring recei developments.	

			23.Drawing a Pane for Motor Speed Control 24.How to Read a Diagram of Electri 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, 20 points for Midterm Practical Exams for the second 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)	Engineering Drawing Technology((A.W-Wander William))MC-Graw-Hill 1977
Main references (sources)	Engineering Drawing Graphic Techologl Frend MC-Graw-Hill 1976
Recommended books and references (scientific journals, reports…)	دسة الوصفية-محمد امين و هيب-كلية الهندسة جامعة عين شمس١٩٧٩
Electronic References, Websites	https://zlibrary-asia.se/ https://www.researchgate.net/

Course Description Form

Course Name:
Mathematic 1
Course Code:
E115
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: Ali Hassan Email: ali.hasan@stu.edu.iq
Course Objectives

1-Developing a fundamental understanding of the laws and mathematical issu necessary for solving simple and complex electrical circuits. 2-Applying theoretical concepts: Enhancing the ability to apply theoret concepts in the design and analysis of electronic circuits.	• ..... • ..... • .....

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	2hours 2hours 2hours 2hours 2hours 2hours 2hours 2hours	1-Understanding the applications o mathematics in electrical circuits. 2-Developing critical thinking a problem-solving skills through	Matrices Trigonometric identit Complex numbers Finding the roots of complex numbers Geometric representation of complex numbers	1. Conducting laboratory experiments to buil and test electrical circuits. This enhances theoretic understanding and develops practical skills.	Weekly, Monthly, Dail and Written Exams, and

9 10 11 12 13 14 15	2hours 2hours 2hours 2hours 2hours 2hours	circuit analysis ar troubleshooting.	Exponents and logarithms and their laws Differentiation Polynomial functions and their derivatives Derivative algebra Parametric functions Applications of differentiation Maximum and minimu values Distance, speed, and acceleration Finding the arc length a curve Equation of the tange and normal Speed and acceleratio	2. Seeking feedback from instructors and pee to identify strength and weaknesses. 3. Reviewing concepts periodical 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. 5. Encouraging self-research on ne topics in electronic and exploring recer developments.	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/

Course Description Form

Course Name:
Mathematic 2
Course Code:
E124
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: Ali Hassan Email: ali.hasan@stu.edu.iq
Course Objectives

1-Developing a fundamental understanding of the laws and mathematical issu necessary for solving simple and complex electrical circuits. 2-Applying theoretical concepts: Enhancing the ability to apply theoret concepts in the design and analysis of electronic circuits.	• ..... • ..... • .....

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	2hours 2hours 2hours 2hours 2hours 2hours 2hours 2hours	1-Understanding the applications o mathematics in electrical circuits. 2-Developing critical thinking a problem-solving skills through	Equation of the tange Calculating changes in voltage and current w respect to time Graphing functions Maximum and minimu limits and inflection points Asymptotes	1. Conducting laboratory experiments to buil and test electrical circuits. This enhances theoretic understanding and develops practical skills.	Weekly, Monthly, Dail and Written Exams, and

9 10 11 12 13 14 15	2hours 2hours 2hours 2hours 2hours 2hours	circuit analysis an troubleshooting.	Limits Integration The relationship between integration a differentiation Definite and indefinite integrals Applications of integration Revolution volumes Solving differential equations	2. Seeking feedback from instructors and pee to identify strength and weaknesses. 3. Reviewing concepts periodical 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. 5. Encouraging self-research on ne topics in electronic and exploring recer developments.	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/

Course Description Form

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 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 humai rights Roots of human rights Life in Sumer seven thousand years ago Historical developmer 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 enhanc memory and understanding. -Using educational programs and interactive applications to	Weekly, Monthly, Dail and Written Exams, and Final Term Exam.

10 11 12 13 14 15	2hours 2hours 2hours 2hours 2hours		Political freedom in Islam Types of public rights Universal Declaration Human Rights The impact of administrative corruption on human rights and society Systematic remedies f corruption and community protectior Fundamental international law in human rights Amnesty Internationa International Commit of the Red Cross Arab Charter on Huma Rights	better grasp concep such as circuit simulations. -Encouraging self-research on new topics in human rights and explorin new laws.	

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)	
Main references (sources)	
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	https://zlibrary-asia.se/ https://www.researchgate.net/

Course Description Form

Course Name:
Occupational Safety
Course Code:
E114
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: Hanaa abduljabar abdulrazaq Email: hanaa.abduljabar@stu.edu.iq

Course Objectives	
Providing a clear and comprehensive overview of occupational safe its objectives, the reasons behind it, and the protection methods prevent and reduce workplace accidents	• ..... • ..... • .....

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 t basic principles occupational safety	Occupational safety: it necessity, objectives, and outcomes Occupational safety in terms of its impact on individuals and famili Maintenance: its objectives and the importance of prior planning	Regularly reviewin concepts and apply them to new problems to enhanc memory and understanding. Using educational programs and interactive applications to bett	Weekly, Monthly, Dail and Written Exams, and Final Term Exam.

10 11 12 13 14 15	2hours 2hours 2hours 2hours 2hours		Maintenance regulations: comparis between them Structure of health an occupational safety departments General health and occupational safety programs for workpla protection Health and safety programs: specializati and prevention of traf accidents Firefighting and fire equipment Causes of industrial accidents Electrical accidents Chemical hazards Protective and person equipment	understand the concepts. Encouraging self-research on new topics in occupatio safety and explorin concepts and instructions	

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)	
Main references (sources)	
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	https://zlibrary-asia.se/ https://www.researchgate.net/

Course Description Form

Course Name:
English
Course Code:
E126
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 LAITH Email: mohammed.laith@stu.edu.iq
Course Objectives

Teaching students how to construct sentences in English, interact w individuals from other countries who speak English, and prep students to apply for government and local companies upon graduat	• ..... • ..... • .....

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	-Ability to communicate effectively in spoken English, including clear pronunciation a appropriate vocabulary for various contexts	Unit 1 (hello) Unit 2 (your world) personal information family and friends The way I live Every day Place I like Where I live Happy birthday we had a good time	Regularly reviewin concepts and apply them to new problems to enhanc memory and understanding. Using educational programs and interactive	Weekly, Monthly, Dail and Written Exams, and Final Term Exam.

10 11 12 13 14 15	2hours 2hours 2hours 2hours 2hours	- Ability to understand spoken English i conversations, lectures, and discussions. Writing: Ability t write clear and coherent texts, including essays reports, and emails, using proper grammar and punctuation - Ability to re and comprehen variety of tex including articl literature, a technical documents.	we can do it thank you very much here and now it's time to go Review	applications to bett understand the concepts	

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)	New Headway Beginner - Student's Book
Main references (sources)	
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	https://zlibrary-asia.se/ https://www.researchgate.net/

Course Description Form

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 Email:

Course Objectives	
Teaching students how to use the computer and its applicatic 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 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 t basic principles using a compute Learning to use essential applications for the job market.	System software and application programs Concept of the operati system Internal operating system commands Windows operating system Components of the ma desktop screen Handling desktop icor	Regularly reviewin concepts and apply them to new problems to enhanc memory and understanding. Using educational programs and interactive	Weekly, Monthly, Dail and Written Exams, and Final Term Exam.

10 11 12 13 14 15	2hours 2hours 2hours 2hours 2hours		Familiarization with t components of My Computer Utilizing control panel programs Using the RUN option execute programs Working with the Pair program to create, sav and retrieve drawings Handling the Notepad window for text writi Concept of computer viruses	applications to bett understand the concepts	

Course Evaluation

Distribution as follows: 30 points for practical 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)	
Main references (sources)	
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	https://zlibrary-asia.se/ https://www.researchgate.net/

Course Description Form

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 understand the fundamental principles of electronics, including basic electronic components such as resistors, capacitors, and transistors. 2. Applying Theoretical Concepts: Enhancing the ability to apply theoretic 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 buil and test electronic circuits. 4. Information and Communication Technology: Understanding the role of electronics 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 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 4hours 4hours	1. Understanding Electronics Applicatio 2. Developing Critical Thinking and Problem-Solving Skill through Circuit Analy and Fault Detection. 3. Ability to Use Electronic Laboratory Tools, such as Multimeters, Signal Generators, and Oscilloscopes. 4. Analyzing Electronic Circuits	Variable power supply Voltage regulato Thyristor Diac and Triac Applications of silicon rectifiers Oscillators Transistor Operational amplifier Inverting summi circuit and outpu equation Non-inverting summing circuit and output equation Examples and applications	1. Conducting laboratory experiments to bui and test electronic circuits. This enhances theoretic understanding and develops practical skills. 2. Seeking feedback from instructors and pee to identify strength and weaknesses. 3. 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. 5. Encouraging self-research on ne topics in electronic and exploring rece developments.	Weekly, Monthly, Daily and Written Exams, and Fi 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)	Floyd, Thomas L. Electronic devices. Pea Education India, 2005
Main references (sources)	Gupta, J. B. *Fundamentals Of Electrical Er & Electronics*. SK Kataria and Sons, 2009.
Recommended books and references (scientific journals, reports…)	Goldsmith, Andrea. *Wireless communications*. Cambridge university press, 2005.

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

Course Description Form

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 understand the fundamental principles of electronics, including basic electronic components such as resistors, capacitors, and transistors. 2. Applying Theoretical Concepts: Enhancing the ability to apply theoretic 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 buil and test electronic circuits. 4. Information and Communication Technology: Understanding the role of electronics 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 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 4hours 4hours	1. Understanding Electronics Applicatio 2. Developing Critical Thinking and Problem-Solving Skill through Circuit Analy and Fault Detection. 3. Ability to Use Electronic Laboratory Tools, such as Multimeters, Signal Generators, and Oscilloscopes. 4. Analyzing Electronic Circuits	Subtractor circu and equations fo subtracting inpu voltages Applications of operational amplifiers Comparator - its circuit - working principle Linear applicatio of operational amplifiers Schmitt trigger Wave generators using operationa amplifiers Monostable multivibrator pu generator Triangle wave generator Analog calculato Active RC filters Fabrication of an integrated circui for N-type transistor Basic methods fo fabricating integrated circui	1. Conducting laboratory experiments to bui and test electronic circuits. This enhances theoretic understanding and develops practical skills. 2. Seeking feedback from instructors and pee to identify strength and weaknesses. 3. 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. 5. Encouraging self-research on ne topics in electronic and exploring rece developments.	Weekly, Monthly, Daily and Written Exams, and Fi 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)	Floyd, Thomas L. Electronic devices. Pear Education India, 2005
Main references (sources)	Gupta, J. B. *Fundamentals Of Electrical Er & Electronics*. SK Kataria and Sons, 2009.
Recommended books and references (scientific journals, reports…)	Goldsmith, Andrea. *Wireless communications*. Cambridge university press, 2005.

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

Course Description Form

Course Name:
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 Email: h.m.a.alrudainy@stu.edu.iq

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 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.	

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 10 11 12 13 14	4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours	1.Understanding measuring instrumen 2. Developing Critical Thinking and Problen 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 devic Moving coil measuring instruments Types of resistor 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	1. Conducting laboratory experiments to bui and test electronic circuits. This enhances theoretic understanding and develops practical skills. 2. Seeking feedback from instructors and pee to identify strength and weaknesses. 3. 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. 5. Encouragin self-research on ne topics in electronic and exploring rece developments.	Weekly, Monthly, Daily and Written Exams, and Fi 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)	Floyd, Thomas L. Electronic devices. Pear Education India, 2005
Main references (sources)	Gupta, J. B. *Fundamentals Of Electrical Er & Electronics*. SK Kataria and Sons, 2009.

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

Course Description Form

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: h.m.a.alrudainy@stu.edu.iq

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 th 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 w 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 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 4hours 4hours	1.Understanding measuring instruments 2. Developing Critic Thinking and Problem-Solving Skills through Circu Analysis and Fault Detection. 3. Ability to Use Electronic Laborato Tools, such as Multimeters, Signal Generators, and Oscilloscopes. 4. Analyzing Electronic Circuits	Arduino – its featur Light sensors Atmospheric pressu measuring devices Calibration and comparison of DC voltmeter Measuring amplitu and frequency with an oscilloscope Measuring DC volta with an oscilloscop Using a signal generator with an oscilloscope Design and analysis the basic circuit of a signal generator Power meter (Wattmeter) Wien bridge for AC measure unknown frequency Wien bridge for AC measure unknown capacitance Wien bridge for AC measure inductanc	1. Conducting laboratory experiments to bui and test electronic circuits. This enhances theoretic understanding and develops practical skills. 2. Seeking feedback from instructors and pee to identify strength and weaknesses. 3. 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. 5. Encouragin self-research on ne topics in electronic and exploring recer developments.	Weekly, Monthly, Daily, 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)	Floyd, Thomas L. Electronic devices. Pearson Educa India, 2005

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

Course Description Form

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: muaad.nasir@stu.edu.iq

Course Objectives	
1-Developing a basic understanding of communication systems: Enablin students to understand the fundamental principles of how communicatior 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.	

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 10 11 12 13 14	4hours 4hours 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	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 detecto Automatic gain control (AGC) Synchronous detector FM and PM modulation Mathematical analysis of modulated wave	1. Conducting laboratory experiments to bui and test electronic circuits. This enhances theoretic understanding and develops practical skills. 2. Seeking feedback from instructors and pee to identify strength and weaknesses. 3. 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. 5. Encouragin self-research on ne topics in electronic and exploring rece developments.	Weekly, Monthly, Daily and Written Exams, and Fi Term Exam.

			Modulation inde and frequency deviation Frequency spectrum width FM and PM Types of FM generation Some types of FM 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 Tuab Segilling
Recommended books and references (scientific journals, reports…)	Goldsmith, Andrea. *Wireless communications*. Cambridge university press, 2005.
Electronic References, Websites	https://zlibrary-asia.se/ https://www.researchgate.net/

Course Description Form

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: muaad.nasir@stu.edu.iq

Course Objectives	
1-Developing a basic understanding of communication systems: Enablin students to understand the fundamental principles of how communicatior 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.	

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 10 11 12 13 14	4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours	1.Understanding communication syste 2. Developing Critical Thinking and Problen 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-Sampling Quantization-coding transforn Digital Modulati PCM Digital Modulati DPCM Digital Modulati DM Mobile-introduction-principles-technics-wireles technics GSM-functions-structure. Mobile-FDMA-TDMA-CDMA.	1. Conducting laboratory experiments to bui and test electronic circuits. This enhances theoretic understanding and develops practical skills. 2. Seeking feedback from instructors and pee to identify strength and weaknesses. 3. 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. 5. Encouragin self-research on ne topics in electronic and exploring rece developments.	Weekly, Monthly, Daily and Written Exams, and Fi 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)	Electronic Communication. Dennis -Riddy
Main references (sources)	Principle of communication systems Tuat Segilling

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

Course Description Form

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: Enablin students to understand the fundamental principles of how communicatior 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.	

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 10 11 12 13 14	4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours	1.Understanding communication syste 2. Developing Critical Thinking and Problen 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 an their types Basic parameter of transmission lines Applications of transmission lin Introduction to optical fibers an their types Advantages, disadvantages, a applications of optical fibers Basics of optical fibers, Snell's firs and second law Propagation mo in optical fibers Types of optical fibers Practical specifications of optical fibers Transmission characteristics over optical fibe Attenuation	1. Conducting laboratory experiments to bui and test electronic circuits. This enhances theoretic understanding and develops practical skills. 2. Seeking feedback from instructors and pee to identify strength and weaknesses. 3. 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. 5. Encouragin self-research on ne topics in electronic and exploring rece developments.	Weekly, Monthly, Daily and Written Exams, and Fi 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)	Electronic Communication. Dennis -Riddy
Main references (sources)	Principle of communication systems Tuat Segilling

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

Course Description Form

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 communicatior 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.	

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 10 11 12 13 14	4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours 4hours	1.Understanding fibe optics principles 2. Developing Critical Thinking and Proble 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 an their types Basic parameter of transmission lines Applications of transmission lin Introduction to optical fibers an their types Advantages, disadvantages, a applications of optical fibers Basics of optical fibers, Snell's firs and second law Propagation mo in optical fibers Types of optical fibers Practical specifications of optical fibers Transmission characteristics over optical fibe Attenuation	1. Conducting laboratory experiments to bui and test fiber optic This enhances theoretical understanding and develops practical skills. 2. Seeking feedback from instructors and pe to identify strength and weaknesses. 3. Reviewing concepts periodica and applying them new problems to reinforce memory and understanding 4. Using educational softwa and interactive applications to bet understand concep such as circuit simulations. 5. Encouragin self-research on ne topics in electronic and exploring rece developments.	Weekly, Monthly, Daily and Written Exams, and Fi 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)	Electronic Communication. Dennis -Riddy
Main references (sources)	Principle of communication systems Tua Segilling

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

Course Description Form

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 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	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 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	Introduction to microwaves Microwaves and their applications Waveguide Types of waveguides Smith chart Wave propagatio in transmission lines Practical example Microwave paths Fresnel zone Electromagnetic waves Optical properties electromagnetic waves Propagation of uniform plane waves Perpendicular incidence of uniform waves or flat surfaces Microwave valves and generators Satellite communication	1. Conducting laboratory on microwave system This enhances theoretical understanding and develops practical skills. 2. Seeking feedback from instructors and pee to identify strength and weaknesses. 3. 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. 5. Encouragin self-research on ne topics in electronic and exploring rece developments.	Weekly, Monthly, Daily and Written Exams, and Fi 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)	Electronic Communication. Dennis -Riddy
Main references (sources)	Principle of communication systems Tual Segilling

Recommended books and references (scientific journals, reports…)	Goldsmith, Andrea. *Wireless communications*. 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 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	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 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 Laborato 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 pow to noise power rat Modulation and multiplexing techniques Components of satellite communication systems Satellite systems Applications of satellite communication Communications and telephone Radio Radio and televisi broadcasting Data and internet communications VSAT system GPS system Evolution of the G system	1. Conducting laboratory on microwave system This enhances theoretical understanding and develops practical skills. 2. Seeking feedback from instructors and pee to identify strength and weaknesses. 3. 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. 5. Encouragin self-research on ne topics in electronic and exploring rece developments.	Weekly, Monthly, Daily and Written Exams, and Fi 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)	Electronic Communication. Dennis -Riddy
Main references (sources)	Principle of communication systems Tual Segilling

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