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

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Name: Anwar AbdulKhaleq Abood

Date 29/ 6/ 2026

Signature:

Approval of the Dean

Dr. Diyah K. Shary

Date 29/ 6/ 2026

2026

Academic Program Description Form

University Name: Southern Technical University

Faculty/Institute: Basra Technical Institute

Scientific Department: Electrical Techniques

Academic or Professional Program Name: Diploma Degree

Final Certificate Name: Diploma Degree in Electrical Techniques

Academic System: Semester

Description Preparation Date: 15 / 10/ 2025

File Completion Date: : 1 / 3/ 2026

Signature:

Head of Department Name:

Dr. Muaad N. Hussain

Date: / / 2026

Signature:

Scientific Associate Name:

Dr. Mohammed H. Radi

Date: 6 /7/ 2026

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Academic Program Description Form

University Name: Southern Technical University

Faculty/Institute: Basra Technical Institute

Scientific Department: Electrical Techniques

Academic or Professional Program Name: Diploma Degree

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Academic Program and Course Description Guide

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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.

1. Program Vision

The Department of Electrical Technologies seeks to build a department based on modern frameworks with a technical educational system within an applied and practical academic structure, taking into account scientific developments and advancements in the electricity sector, with a staff possessing global expertise, to graduate students with a high level of training, taking on the responsibility of raising the production level in state and private sector laboratories.

2. Program Mission

The student is awarded a technical diploma in Electrical Technologies / Power Branch upon graduation and is provided with scientific knowledge (theoretical, practical, and hands-on) in his field of specialization, enabling him to work in power generation and distribution stations, as well as various state facilities and circuits, in addition to meeting the private sector's need for highly trained personnel.

3. Program Objectives

1. Preparing highly educated, qualified, and distinguished staff to support the governorate's schools and meet their needs for teaching personnel.
2. Contributing to shaping the student's personality and preparing them outstandingly and appropriately by providing a teaching environment that relies on simulating traditional teaching while using modern educational methods and tools.
3. Contributing to spreading scientific culture through cooperation with local institutions and various ministries, and organizing seminars, lectures, and courses (both in-person and online).
4. Encouraging the department's faculty members to produce innovative scientific research and participate in local and international scientific conferences, specialized seminars, and general forums.
5. Establishing scientific and technical communication with other colleges at different universities to serve the exchange of scientific expertise and enrich knowledge related to electricity.
6. Providing services to the community and the environment by offering scientific and practical consultations and expertise to institutions and companies, and contributing to solving problems arising from electrical issues.

4. Program Accreditation

None

5. Other external influences

Training courses, field scientific visits, summer training, practical part, scientific consultations

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	11 for 1st stage		40%	Core course
	10 for 2nd one		60%	
College Requirements				
Department Requirements				
Summer Training				
Other				

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

Year 1- Semester 1			
Course or Module Title	Credit rating		
	Total	Lab.	Theory
Electrical Circuits/1	4	2	2
Electrical Installation	4	2	2
Principle of Electronics	4	2	2
Computer Fundamentals/1	3	2	1
Mathematics/1	2	-	2
Occupational Safety	2	-	2
Engineering Drawing	3	3	-
English Language/1	2	-	2
Human Rights and Democracy	2	-	2
Workshops	3	3	-
Total	28	14	14

Year 1- Semester 2			
Course or Module Title	Credit rating		
	Total	Lab.	Theory
Electrical Circuits\2	4	2	2
Electrical Installation Applications	4	2	2
Electronic Circuits	4	2	2
Electrical Drawing/1	3	3	-
Mathematics/2	2	-	2
Digital Electronic	4	2	2
Workshops	3	3	-
Total	24	14	10

Year2- Semester 1			
Course or Module Title	Credit rating		
	Total	Lab.	Theory
Industrial Installations	4	2	2
Dc Machines	5	3	2
Power plants and their protection	4	2	2
Fundamentals of Power Electronics	5	3	2
Maintenance Workshop	3	3	-
Computer Fundamentals/2	2	2	-
Electrical Drawing/2	3	3	-
English Language/2	2	-	2
Graduation Project	2	2	-
Total	30	20	10

Year2- Semester 2			
Course or Module Title	Credit rating		
	Total	Lab.	Theory
Industrial installations applications	4	2	2
AC Machines	5	3	2
Power Transmission and Distribution	4	2	2
Power Electronics applications	5	3	2
Maintenance Workshop	3	3	-
Programmable Logic controllers	3	2	1
The crimes of the Baath regime in Iraq	2	-	2

Graduation Project	2	2	-
Total	28	17	11

7. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
			Theoretical	Practical
2nd year		Programmable Logic controllers	2	1
1st year		English Language/1	2	–

8. Expected learning outcomes of the program

Knowledge	
Learning Outcomes 1	Learning Outcomes Statement 1
1–Enabling students to gain knowledge and understanding in working with modern control systems and in analyzing programs related to these systems. **1- Enabling the student to acquire knowledge and understanding of the English language and study its grammar.**	**1–Enabling the student to understand logic circuits.** **2- Enabling the student to pronounce English words correctly**
Skills	
Learning Outcomes 2	Learning Outcomes Statement 2
2–Teaching him the skill of programming modern control circuits **2- Developing the skill of knowing tenses in the language by learning about the auxiliary verb**	**2 – Equipping him with the skill to detect electrical faults related to power generation and transmission systems** **2- Enabling him to understand the speaker and respond quickly with simple sentences**
Learning Outcomes 3	Learning Outcomes Statement 3
3 Teaching him the skill of easily detecting electrical faults	**Learn new ways to control electrical devices and methods of extension using programming**
Ethics	
Learning Outcomes 4	Learning Outcomes Statement 4
1- Developing students' abilities to participate with ideas and make	**4- Imagine the shapes of electrical control circuits using programmed components.**

suggestions.	
Learning Outcomes 5 **5- Enabling students to think and analyze topics related tocontrlling systems.**	Learning Outcomes Statement 5 **5- Enabling students to think and analyze topics related to solving practical problems.**

9. Teaching and Learning Strategies

Teaching and learning strategies and methods adopted in the implementation of the program in general.

1- Explaining the engineering theories related to the field of electric power generation and transmission, as well as theories for simulating and controlling various industrial systems.
2- Forming discussion groups during or outside lectures to discuss technological and scientific topics that require thinking and analysis.
3- Providing students with the basics and additional topics related to previous learning outcomes for skills in solving practical problems.
4- Solving a set of practical examples by academic staff specialized in the field of electrical technologies.
5- Assigning students homework to solve complex problems as a preparation for moving to the stage of solving practical problems.
6- Engaging students during lectures in solving some practical problems.
7- Supervising the department's scientific laboratories by academic staff specialized in the field of electrical technologies.

10. Evaluation methods

Implemented at all stages of the program in general.

Weekly, monthly, and daily exams, as well as the end-of-year exam. Daily observations, student discussions, homework, pop quizzes, and lab experiments.

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/ Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
prof. asst. prof. asst. prof. asst. prof. asst. prof. asst. prof. teacher asst. teacher asst.	physics physics Electricity Electricity Electricity Electricity Law physics physics	solar energy Madical Communication Control Communication power International Maths physics			13	1

teacher asst.	Electricity	General				
teacher asst.	Electricity	General				
teacher asst.	Electricity	General				
teacher asst.	Electricity	General				
teacher asst.	Electricity	General				

Professional Development

Mentoring new faculty members

Briefly describes the process used to mentor new, visiting, full-time, and part-time faculty at the institution and department level.

- **Develop the necessary strategic plans to improve the teaching staff and encourage them to participate in courses to enhance their skills and gain experience, such as courses in teaching methods, computers, Arabic language, and specialized courses.**

Professional development of faculty members

Briefly describe the academic and professional development plan and arrangements for faculty such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

- **He encouraged them to hold specialized courses, give seminars, and participate in cultural conferences and symposiums through previously planned programs.**

12. Acceptance Criterion

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

- **Students are registered and accepted by the Student Affairs and Registration Division at the institute, taking into account the incorporation of advanced modern methods in registration processes. The department accepts graduates from the scientific and vocational branches who are centrally admitted by the ministry based on competition and graduation averages.**

13. The most important sources of information about the program

State briefly the sources of information about the program.

- **1- The Internet information network.**
  2- Experiences of Arab and international universities.
  3- Current curricula according to the terms provided to the department by the esteemed ministry.
  4- Textbooks available in libraries.

14. Program Development Plan

1- Holding meetings for the purpose of reviewing curricula and providing proposals and studies to develop them in order to send them to higher authorities in the ministry for their review and to prepare reports on the level of education and learning every year or every two years.
2- Working on developing scientific laboratories.

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
1st stage 1st semester	Electrical Circuits/1		C	√	√	√	√	√	√	√	√	√	√	√	√
	Electrical Installation		C	√	√	√	√	√	√	√	√	√	√	√	√
	Principle of Electronics		C	√	√	√	√	√	√	√	√	√	√	√	√
	Computer Fundamentals/1		C	√	√	√	√	√	√	√	√	√	√	√	√
	Mathematics/1		C	√	√	√	√					√	√	√	
	Occupational Safety		O	√	√	√	√	√	√	√	√				
	Engineering Drawing		O	√	√	√	√	√	√	√	√	√	√	√	√
	English Language/1		O	√	√	√	√	√	√	√	√	√	√	√	√
	Human Rights		O	√	√	√	√								
	Workshops		C	√	√	√	√					√	√		

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

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
1st stage 2st semester	Electrical Circuits/1		C	√	√	√	√	√	√	√	√	√	√	√	√
	Electrical Installation		C	√	√	√	√	√	√	√	√	√	√	√	√
	Principle of Electronics		C	√	√	√	√	√	√	√	√	√	√	√	√
	Computer Fundamentals/1		C	√	√	√	√	√	√	√	√	√	√	√	√
	Mathematics/1		C	√	√	√	√					√	√	√	
	Occupational Safety		O	√	√	√	√	√	√	√	√				
	Engineering Drawing		O	√	√	√	√	√	√	√	√	√	√	√	√
	English Language/1		O	√	√	√	√	√	√	√	√	√	√	√	√
	Human Rights		O	√	√	√	√								
	Workshops		C	√	√	√	√					√	√		

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
2st stage 1st semester	Industrial Installations		C	√	√	√	√		√	√	√	√	√	√	√
	Dc Machines		C	√	√	√	√	√	√	√			√	√	√
	Power plants and their protection		C	√	√	√	√	√	√	√	√	√	√	√	√
	Fundamentals of Power Electronics		C	√	√	√	√	√	√	√	√	√	√	√	√
	Maintenance Workshop		C	√	√	√	√	√	√	√	√		√	√	
	Computer Fundamentals/2		O	√	√	√	√	√	√	√	√	√	√	√	√
	Electrical Drawing/2		C	√	√	√	√	√	√	√	√	√	√	√	√
	English Language/2		O	√	√	√	√	√	√	√	√	√	√	√	√
	Graduation Project		C	√	√	√	√	√	√	√	√			√	√

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
2st stage 2st semester	Industrial installations applications		C	√	√	√	√		√	√	√	√	√	√	√
	AC Machines		C	√	√	√	√	√	√	√			√	√	√
	Power Transmission and Distribution		C	√	√	√	√	√	√	√	√	√	√	√	√
	Power Electronics applications		C	√	√	√	√	√	√	√	√	√	√	√	√
	Maintenance Workshop		C	√	√	√	√	√	√	√	√		√	√	
	Programmable Logic controllers		O	√	√	√	√	√	√	√	√	√	√	√	√
	The crimes of the Baath regime in Iraq		C	√	√	√	√	√	√	√	√	√	√	√	√
	Graduation Project		O	√	√	√	√	√	√	√	√	√	√	√	√
	Industrial installations applications		C	√	√	√	√	√	√	√	√			√	√

First stage

Course Description Form

1. Course Name:
Electrical Circuits/1
2. Course Code:
3. Semester / Year:
Semester
4. Description Preparation Date:
1/3/ 2026
5. Available Attendance Forms:
Attendance only
6. Number of Credit Hours (Total) / Number of Units (Total)
Total (4) Lab.(2) Theory (2) , 4 units per semester
7. Course administrator's name (mention all, if more than one name)
Name: asst. teacher: Wasan L. jassim **Email:** wasan.loay@sty.edu.iq
8. Course Objectives

Course Objectives	**1- Understanding the basic principles of circuits** **2- Analyzing and designing simple electrical circuits** **3- Acquiring skills to use tools and devices for circuit analysis** **4-Developing engineering thinking and applying theories to solve problems.**
9. Teaching and Learning Strategies	
Strategy	1- Cooperative Concept Mapping Teaching Strategy 2- Brainstorming Strategy 3- Note-Taking Teaching Strategy

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1st 2nd 3rd 4th 5th 6th 7th 8th 9th 10th 11th 12th 13th 14th 15th	2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h	After studying curriculumو the students will be able: 1- Understandin the basic principl of circuits 2- Analyzing an designing simple electrical circuits 3- Acquiring ski to use tools and devices for circui analysis 4-Developing engineering thinking and applying theories solve problems.	• During the academic year, the student learns the basics of the DC electrical circuits subject. • The student learns the types o electrical resistors, how to read them, and the factors affecting them. • The student learns the types o connections used in electrical circuits. Regarding the skill objectives specific to the course: • The ability to design experime conduct them, analyze data, and interpret it. • The ability to identify, formula and solve problems. • Proficiency in the necessary mathematical, basic, and engineering sciences. • The ability to use the techniqu and skills required in work.	**1.** Theoretical lectures 2. Lectures for direct and open scientific discussion between lecturers and students 3. Practical application of the lectures in the laboratories specific to the subject 4.Student discussion sessions addressing specific technical problems	Monthly,midterm, final exams, writing reports, daily preparation, pop quizzes

11. Course Evaluation

The annual pursuit is(50) and distributed as follows Theory **(20)** , practical **(20)** , evaluation task **(10)**, **The final Exam** (50) , Theory **(40)** , practical **(10)**

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	**The basics of electrical engineering**
Main references (sources)	**Introductory Circuit Analysis- Robert L. Boylestad**
Recommended books and references (scientific journals, reports…)	**1-MIT (Massachusetts Institute of Technology) – ocw.mit.edu** **2-stanford.edu** **3-cu.edu.eg (Cairo University)**
Electronic References, Websites	**IEEE Xplore Digital Library – ieeexplore.ieee.org** **ScienceDirect (Elsevier)**

Course Description Form

1. Course Name:

Electrical Installation

2. Course Code:

3. Semester / Year:

Semester

4. Description Preparation Date:

1/3/ 2026

5. Available Attendance Forms:

Attendance only

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

Total (4) Lab.(2) Theory (2) , 4 units per semester

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

Name: asst. prof: Ali H. AbdulHadi

Email: :a.h.a@stu.edu.iq

8. Course Objectives

Course Objectives	• General Objective: To introduce the student to different electrical installation systems • Specific Objective: The student will be able to identify electrical materials and wiring systems used in laboratories and homes, install and set up electrical machines, and understand control and protect methods for different loads in the installation

9. Teaching and Learning Strategies

Strategy	1- Cooperative Concept Mapping Teaching Strategy 2- Brainstorming Strategy 3- Note-Taking Teaching Strategy

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1st	2h	After studying	• Overview	1. Theoretical	Monthly, midterm, a

2nd 3rd 4th 5th 6th 7th 8th 9th 10th 11th 12th 13th 14th 15th	2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h	curriculumو the students will be able: 1- Understanding the basic principles of circuits 2- Analyzing and designing simple electrical circuits 3- Acquiring skills to use tools and devices i circuit analysis 4-Developing engineering thinking a applying theories to solve problems.	● Principles of electricity ● Conductive electrical materi ● Insulating materials ● Magnetic properties of materials ● Mechanical properties of electrical materials ● Stages that electrical energy goes through ● Basic principles on how to equip the consumer ● Types of switches used in electrical installations ● Protection devices used in electrical installations ● Circuit breakers ● Electrical wiring systems ● Household electrical installations ● Grounding ● Lightning arrester ● Electric shock ● Protection from earth leaka current ● Electrical energy measuring device ● Inspection and testing of electrical installations ● DC Motors ● AC Motors formulate, an solve problems.	lectures 2. Lectures for direct and open scientific discussion between lecturers and students 3. Practical application of the lectures in the laboratories specific to the subject 4.Student discussion sessions addressing specific technical problems	final exams, writing reports, daily preparation, a pop quizzes

11. Course Evaluation

The annual pursuit is(50) and distributed as follows Theory **(20)** , practical **(20)** , evaluation task **(10)**, **The final Exam** (50) , Theory **(40)** , practical **(10)**

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	**2- Electrical installation technology (by Michael Neidle**
Main references (sources)	**1- Electrical installation and workshop technology) Vol. I, II, III (by F.G. Thompson).**
Recommended books and references (scientific journals, reports…)	**1-MIT (Massachusetts Institute of Technology) – ocw.mit.edu**
Electronic References, Websites	**IEEE Xplore Digital Library – ieeexplore.ieee.org** **ScienceDirect (Elsevier)**

Course Description Form

1- Course Name:

Principle of Electronics

2- Course Code:

3- Semester / Year:

Semester

4- Description Preparation Date:

1/3/ 2026

5- Available Attendance Forms:

Attendance only

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

Total (4) Lab.(2) Theory (2) , 4 units per semester

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

Name: asst. teacher. : Hanaa A. AbdulRazak

Email: h.a.alrazak @stu.edu.iq

8- Course Objectives

Course Objectives	• General Objective: To introduce the student to different electrical installation systems • Specific Objective: The student will be able to identify electrical materials and wiring systems used in laboratories and homes, install and set up electrical machines, and understand control and protect methods for different loads in the installation

9- Teaching and Learning Strategies

Strategy	1- Cooperative Concept Mapping Teaching Strategy 2- Brainstorming Strategy 3- Note-Taking Teaching Strategy

10- Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1st	2h	After studying	• **Overview* Semiconductor**	**1.** Theoretical	Monthly, midterm,

2nd **3rd** **4th** **5th** **6th** **7th** **8th** **9th** **10th** **11th** **12th** **13th** **14th** **15th**	**2h** **2h** **2h** **2h** **2h** **2h** **2h** **2h** **2h** **2h** **2h** **2h** **2h** **2h**	curriculumو the students will be able: 1- Understanding the basic principles of circuits 2- Analyzing and designing simple electrical circuits 3- Acquiring skills to use tools and devices i circuit analysis 4-Developing engineering thinking a applying theories to solve problems.	**Theory** *** Doping –** *** Semiconductor Diodes – PN Junction, Depletion Region Formation – Barrier Voltage – Power Loss – Thermal Effects – Forward Biased Diode – Reverse Biased Diode** *** Diode as a Current Rectifier – Half-Wave Rectifier –** *** Full-Wave Rectification – Using Center-Tap Transformer – Bridge Rectifier –** *** Filters – Filtering Using Capacito LC Filter, RC Filter** *** Ripple Factor, Voltage Doublers, Clipping Circuits –** *** Zener – Its Construction – Symbol – Properties –** *** Bipolar Junction Transistor – DC α – DC β, Relationship Betwee DC α and DC β** *** Transistor Characteristic Curve Operating Regions, Definition of ICBO and ICEO –** *** Transistor Biasing Circuits – Base Bias – Emitter Bias – Collector Bias – Self-Bias – Feedback Bias – Voltage Divider Bias – Practical Examples.**	lectures 2. Lectures for direct and open scientific discussion between lecturers and students 3. Practical application of the lectures in the laboratories specific to the subject 4.Student discussion sessions addressing specific technical problems	final exams, writing reports, daily preparation, a pop quizzes

11- Course Evaluation

The annual pursuit is(50) and distributed as follows Theory **(20)** , practical **(20)** , evaluation task **(10)**, **The final Exam** (50) , Theory **(40)** , practical **(10)**

12- Learning and Teaching Resources

Required textbooks (curricular books, if any)	**2- Electronics ciruit / Mosel university**
Main references (sources)	**principele of electronics**
Recommended books and references (scientific journals, reports…)	**1-MIT (Massachusetts Institute of Technology) – ocw.mit.edu**
Electronic References, Websites	**IEEE Xplore Digital Library –**

Course Description Form

1- Course Name:
Computer Fundamentals/1

2- Course Code:

3- Semester / Year:

Semester

4- Description Preparation Date:

1/3/ 2026

5- Available Attendance Forms:

Attendance only

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

Total (2) Lab.(2) Theory ( ) , 2 units per semester

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

Name: programmer :Arwa A. AbdulRahman
Email: mustafaa.alhemeedawi@uokufa.edu.iq

8- Course Objectives

Course Objectives	● Studying the basic components of the computer ● Studying the Excel and Word programs ● Studying the types of scientific functions in the Excel program

9- Teaching and Learning Strategies

Strategy	1- Cooperative Concept Mapping Teaching Strategy 2- Brainstorming Strategy 3- Note-Taking Teaching Strategy

10-Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1st	2h	After studying curriculum،	**Knowledge: The student gets to know:** The AutoCAD program, getting to know the	**1.** Theoretical lectures	Monthly, midterm,

2nd 3rd 4th 5th 6th 7th 8th 9th 10th 11th 12th 13th 14th 15th	2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h	the students will be able: ● Studying the basic components of the computer ● Studying the Excel and Word programs ● Studying the type scientific functions the Excel	different working environment of the progra on the screen Setting up a drawing sheet, opening a new f Getting to know the different drawing commands, controlling drawing specificatio **Skills: The student will be able to** Deal with the Windows operating system. Deal with the components of My Computer In terms of disks, folders, and files **The student will be able to:** Copy and paste folders and files, deal with t recycle bin, How to delete files and recover them.- properties of drives and folders. And files	2. Lectures for direct and open scientific discussion between lecturers and students 3. Practical application of the lectures in the laboratories specific to the subject 4.Student discussion sessions addressing specific technical problems	final exams, writing repor daily preparation, a pop quizzes

11-Course Evaluation

The annual pursuit is(50) and distributed as follows Theory **( )** , practical **(40)** , evaluation task **(10**), **The final Exam (50**) , Theory **( )** , practical **(50)**

12-Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	**1- Computer Workbook for First Grade**
Recommended books and references (scientific journals, reports…)	**1-MIT (Massachusetts Institute of Technology) – ocw.mit.edu**
Electronic References, Websites	**IEEE Xplore Digital Library – ieeexplore.ieee.org**

Course Description Form

1- Course Name:
Mathematics/1
2- Course Code:

3- Semester / Year:

Semester

4- Description Preparation Date:

1/3/ 2026

5- Available Attendance Forms:

Attendance only

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

Total (2) Lab.(–) Theory (2) , 2 units per semester

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

Name: asst. teacher : Mayada Mard Abdul Hussein Al-Asadi

Email: mayada .mard @stu.edu.iq

8- Course Objectives

Course Objectives	● Understands the basic principles of linear algebra and its applications ● Understands algebraic functions, the domain, the corresponding domain algebraic and trigonometric functions, and the purpose of functions ● Understands the rules and applications of differentiation ● Understands the rules of function integration for algebraic a trigonometric functions and the relationship between differentiation a integration with applications

9- Teaching and Learning Strategies

Strategy	1–Cooperative Concept Mapping Teaching Strategy 2- Brainstorming Strategy 3- Note-Taking Teaching Strategy

10- Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

1st 2nd 3rd 4th 5th 6th 7th 8th 9th 10th 11th 12th 13th 14th 15th 16th 17th 18th 19th 20th 21st 22nd 23rd 24th 25th 26th 27th 28th	2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h	After studying curriculum و the students will be able: ● Understands the basic principles of linear algebra and i applications ● Understands algebraic functions, the domain, the corresponding dom of algebraic and trigonometric functions, and the purpose of functior ● Understands the rules and applicatio of differentiation ● Understands rules of funct integration algebraic trigonometric functions and relationship betw differentiation integration v applications.	**Knowledge: The student will be introduce** to: Matrices and determinants and their properties Solving linear equations using Cramer's method Vectors, vector analysis, vector quantities Derivative of trigonometric functions / derivativ logarithmic functions Derivative of exponential functions / derivative o hyperbolic functions **Skills: The student will be able to** Applications of the derivative / equations of tangent and normal Increasing and decreasing, maximum and minim values, and inflection points, graphical representation of functions Applications in general and engineering physics Integration / indefinite integration and integrati of algebraic and logarithmic functions The student will be able to solve: Integration of exponential and trigonometric functions Definite integration / applications of definite integration / area under the curve / area betwee two curves / power calculations Rotational volumes / length of the curve Applications in physics and engineering (work – torque – momentum) General methods in integration, including substitution and integration by parts Building an integrator circuit using resistance an inductance / representing an electrical circuit wi integral equations / amplifier circuit Numerical methods in integration / trapezoidal r	1. Theoretical lectures 2. Lectures for direct and open scientific discussion between lecturers and students 3. Practical application of the lectures in the laboratories specific to the subject 4.Student discussion sessions addressing specific technical problems	Monthly, midterm, an final exams, writing reports, daily preparation, and quizzes

11- Course Evaluation

The annual pursuit is(50) and distributed as follows Theory **(20)** , practical **(20)** , evaluation task **(10)**, **The final Exam** (50) , Theory **(40)** , practical **(10)**

12- Learning and Teaching Resources

Required textbooks (curricular books, if any)	**Theraja**
Main references (sources)	**George B. Thomas,Jr., "Thomas calculus",12th edition**
Recommended books and references (scientific journals, reports…)	**1-MIT (Massachusetts Institute of Technology) – ocw.mit.edu**
Electronic References, Websites	**IEEE Xplore Digital Library – ieeexplore.ieee.org** **ScienceDirect (Elsevier)**

Course Description Form

1- Course Name:
Occupational Safety
2- Course Code:
3- Semester / Year:
Semester
4- Description Preparation Date:
1/3/ 2026
5- Available Attendance Forms:
Attendance only
6- Number of Credit Hours (Total) / Number of Units (Total)
Total (2) Lab.(-) Theory (2) , 2 units per semester
7- Course administrator's name (mention all, if more than one name)
Name: asst. prof:Arkan J. Yosif **Email: a.alhachim@stu.edu.iq**
8- Course Objectives

Course Objectives	• The student understands the basic principles of public safety • The student learns injury prevention and how to avoid it • The student learns how to treat burns and perform artificial respiration • Handling signage and the necessary protective equipment for the type work
9- Teaching and Learning Strategies	
Strategy	1-Cooperative Concept Mapping Teaching Strategy 2- Brainstorming Strategy 3- Note-Taking Teaching Strategy
10-Course Structure	

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1st 2nd 3rd 4th 5th 6th 7th 8th 9th 10th 11th 12th 13th 14th 15th	2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h	After studying curriculum و the students will be able: ● Understands the bas principles of linear algebra and its applications ● Understands algebra functions, the domain, the corresponding domain of algebraic an trigonometric functio and the purpose of functions ● Understands the rul and applications of differentiation ● Understands the r of function integra for algebraic trigonometric functi and the relations between differentia and integration v applications.	Causes of electric shock Types of electrical injuries Rescuing a victim of electric shock – Artificial respiration procedur Treating burns Effects resulting from electric current passing to the ground Fire alarm systems – Control u Fire detectors - Heat detectors Smoke detectors Buildings that should be equipped with a fire alarm system Audible alarm methods, bells, a sirens Guidelines on occupational hea and safety Reducing unsafe behaviors and practices Personal protective equipment Eye protection – Hearing protection Protective personal clothing	**1.** Theoretical lectures 2. Lectures for direct and open scientific discussion between lecturers and students 3. Practical application of the lectures in the laboratories specific to the subject 4.Student discussion sessions addressing specific technical problems	Monthly, midterm, a final exams, writing reports, daily preparation, a pop quizzes

11-Course Evaluation

The annual pursuit is(50) and distributed as follows Theory **(20)** , practical **(20)** , evaluation task **(10)**, **The final Exam** (50) , Theory **(40)** , practical **(10)**

12-Learning and Teaching Resources

Required textbooks (curricular books, if any)	**The institute's library to obtain additional curricul resources**
Main references (sources)	**Occupational Safety Handbook**
Recommended books and references (scientific journals, reports…)	**1-MIT (Massachusetts Institute of Technology) – ocw.mit.edu**
Electronic References, Websites	**IEEE Xplore Digital Library – ieeexplore.ieee.org** **ScienceDirect (Elsevier)**

Course Description Form

1- Course Name:
Engineering Drawing
2- Course Code:
3- Semester / Year:
Semester
4- Description Preparation Date:
1/3/ 2026
5- Available Attendance Forms:
Attendance only
6- Number of Credit Hours (Total) / Number of Units (Total)
Total (3) Lab.(3) Theory (–) , 3 units per semester
7- Course administrator's name (mention all, if more than one name)
Name: Architect: Ayat A, Kalaf **Email: ayat.1990@gmail. com**
8- Course Objectives

Course Objectives	• The student understands the basic principles of engineering drawing • The student learns drawing methods using AutoCAD software • The student learns how to execute commands in the software • The student learns design, area calculation, hatching, and shading
9- Teaching and Learning Strategies	
Strategy	1–Cooperative Concept Mapping Teaching Strategy 2- Brainstorming Strategy 3- Note-Taking Teaching Strategy
10-Course Structure	

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1st 2nd 3rd 4th 5th 6th 7th 8th 9th 10th 11th 12th 13th 14th 15th	2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h	After studying curriculum و the students will be able: ● Understands the bas principles of linear algebra and its applications ● Understands algebra functions, the domain, the corresponding domain of algebraic ar trigonometric functio and the purpose of functions ● Understands the rul and applications of differentiation ● Understands the r of function integra for algebraic trigonometric functi and the relations between differentia and integration v applications.	1- The importance of technical drawing. 2- Getting to know the AutoCAD program interfaces. 3- Methods of executing AutoCAD commands and ways to exit. 4- Navigating between interfaces, displaying menus. 5- Showing and hiding toolbars. 6- Methods of drawing a line using Cartesian coordinates, relative method, and polar method. 7- Display commands, work environment dimensions, boundaries. 8- Drawing isometric objects using the command. 9- GRID. 10- Modification commands. 11- Controlling drawing specifications. 12- Commands for drawing main elements. 13- Adding Single Line texts. 14- Calculating areas. 15- Hatching and shading.	**1.** Theoretical lectures 2. Lectures for direct and open scientific discussion between lecturers and students 3. Practical application of the lectures in the laboratories specific to the subject 4.Student discussion sessions addressing specific technical problems	Monthly, midterm, a final exams, writing reports, daily preparation, a pop quizzes

11-Course Evaluation

The annual pursuit is(50) and distributed as follows Theory ( ) , practical (40) , evaluation task (10), The final Exam (50) , Theory ( ) , practical (50)

12-Learning and Teaching Resources

Required textbooks (curricular books, if any)	**The institute's library to obtain additional curricul resources**
Main references (sources)	**Engineering drawing notebook**
Recommended books and references (scientific journals, reports…)	**1-MIT (Massachusetts Institute of Technology) – ocw.mit.edu**
Electronic References, Websites	**IEEE Xplore Digital Library – ieeexplore.ieee.org** **ScienceDirect (Elsevier)**

Course Description Form

1- Course Name:
English Language/1
2- Course Code:
3- Semester / Year:
Semester
4- Description Preparation Date:
1/3/ 2026
5- Available Attendance Forms:
Attendance only
6- Number of Credit Hours (Total) / Number of Units (Total)
Total (2) Lab.( ) Theory (2) , 2 units per semester
7- Course administrator's name (mention all, if more than one name)
Name: asst. prof. : Dr. Haider M. Dawood **Email: haider.mohammed @stu.edu.iq**
8- Course Objectives

Course Objectives	● Understanding the basic rules of the English language. ● Acquiring English speaking skills. ● Gaining skills in dealing with English terminology. ● Acquiring skills in writing a CV in English.
9- Teaching and Learning Strategies	
Strategy	1-Cooperative Concept Mapping Teaching Strategy 2- Brainstorming Strategy 3- Note-Taking Teaching Strategy
10- Course Structure	

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1st 2nd 3rd 4th 5th 6th 7th 8th 9th 10th 11th 12th 13th 14th	2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h	After studying curriculum و the students will be able: ● Understanding the basic rules of the English language. ● Acquiring English speaking skills. ● Gaining skills in dealing with English terminology. ●Acquiring skills in writing a CV in English.	**Knowledge: The student will get to know:** 1-Hello 2-your world 3-personal information 4-family and friend **Skills** 5-it's my life 6-Everyday 7-Please I like **Will enable the student to** 8-Where I live 9-happy birthday 10-we can had a good time 11-we can do it 12-thank you very much 13- Here and now 14-It's time to go	**1.** Theoretical lectures 2. Lectures for direct and open scientific discussion between lecturers and students 3. Practical application of the lectures in the laboratories specific to the subject 4.Student discussion sessions addressing specific technical problems	Monthly, midterm, a final exams, writing reports, daily preparation, a pop quizzes

11- Course Evaluation

The annual pursuit is(40) and distributed as follows Theory **(30)** , practical **(-)** , evaluation task **(10)**, **The final Exam** (60) , Theory **(60)** , practical **(-)**

12- Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	**New Headway by Liz and John Soars**
Recommended books and references (scientific journals, reports…)	**1-Englih Grammer in use**
Electronic References, Websites	**IEEE Xplore Digital Library – ieeexplore.ieee.org** **ScienceDirect (Elsevier)**

Course Description Form

1- Course Name:
Human Rights and Democracy
2- Course Code:
3- Semester / Year:
Semester
4- Description Preparation Date:
1/3/ 2026
5- Available Attendance Forms:
Attendance only
6- Number of Credit Hours (Total) / Number of Units (Total)
Total (2) Lab.( ) Theory (2) , 2 units per semester
7- Course administrator's name (mention all, if more than one name)
Name: asst. teacher.: Ayad H. Ammer **Email: ayad.hussein @stu.edu.iq**

8- Course Objectives

Course Objectives	• The student understands the basic principles of human rights • The student becomes familiar with the Universal Declaration of Human Rights and the most important European and American conventions • The student becomes familiar with the constitution and other global constitutions • The student becomes familiar with international and local organizations and their role in respecting human rights

9- Teaching and Learning Strategies

Strategy	1-Cooperative Concept Mapping Teaching Strategy 2- Brainstorming Strategy 3- Note-Taking Teaching Strategy

10- Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1st	2h	After studying	Human rights, their definition,	1. Theoretical	Monthly,

2nd 3rd 4th 5th 6th 7th 8th 9th 10th 11th 12th 13th 14th	2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h	curriculumو the students will be able: ● Understanding the basic rules of the English language. ● Acquiring English speaking skills. ● Gaining skills in dealing with English terminology. ●Acquiring skills in writing a CV in English.	objectives Human rights in ancient civilization Human rights in the Middle Ages Human rights in contemporary and modern history Regional recognition of human righ the European Convention Essential human rights and collectiv human rights Guarantees for respecting and protecting human rights The role of non-governmental organizations in respect and protecti General theory of freedoms: the ori of rights and freedoms, the project's position on declared rights and freedoms - Public freedoms according to administrative jurisprudence - Equality between genders - Equality among individuals according to their beliefs and ethnic	lectures 2. Lectures for direct and open scientific discussion between lecturers and students 3. Practical application of the lectures in the laboratories specific to the subject 4.Student discussion sessions addressing specific technical problems	midterm, and final exams, writing reports daily preparation, pop quizzes

11- Course Evaluation

The annual pursuit is(40) and distributed as follows Theory **(30)** , practical **(–)** , evaluation task **(10)**, **The final Exam** (60) , Theory **(60)** , practical **(–)**

12- Learning and Teaching Resources

Required textbooks (curricular books, if any)	**The institute's library to obtain additional curricul resources**
Main references (sources)	**Human Rights Notebook**
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

1- Course Name:
Workshops

2- Course Code:

3- Semester / Year:

Semester

4- Description Preparation Date:

1/3/ 2026

5- Available Attendance Forms:

Attendance only

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

Total (3) Lab.( ) Theory (3) , 3 units per semester

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

Name: asst. prof. : `ass. engineer : Kayth Jaffer`
Email: k.j.d@stu.edu.iq

8- Course Objectives

Course Objectives	**General Objective**: To introduce the student to systems for measuring differ electrical wires and methods of measuring them using tables. **Specific Objective:** The student will be able to identify electrical solder methods, handle printed and regular boards used in building electronic circu how to drill them, how to design electronic circuits, and fix them on prin boards.

9- Teaching and Learning Strategies

Strategy	1-Cooperative Concept Mapping Teaching Strategy 2- Brainstorming Strategy 3- Note-Taking Teaching Strategy

10- Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1st	3h	After studying curriculumو	**Knowledge: The student will be able to** **- Identify the standard diameters of wires**	**1. Theoretical lectures**	**Monthly, midterm,**

2nd 3rd 4th 5th 6th 7th 8th 9th 10th 11th 12th 13th 14th	3h 3h 3h 3h 3h 3h 3h 3h 3h 3h 3h 3h	the students will be able: ● Understanding th basic rules of the English language. ● Acquiring English speaking skills. ● Gaining skills in dealing with Englis terminology. ●Acquiring skills in writing a CV in English.	- Practice using the micrometer to measure wire diameters - Practice the welding process well - Recognize types of resistors and coils and methods to test and read them - Understand printed and regular boards used in circuit construction **Skills: The student will be able to** Wind motors in all methods Open parts of the water pump for air cooling an its faults - Draw motor coils of the water pump for air cooling and rewind them - Perform ground leakage test and short-circuit t - Study the parts of a desk fan **The student will be able to** - Study types of electrical transformers - Design a simple winding of a crane transformer with single and triple outputs - Study parts of a split-phase motor - Draw the electrical circuit of the start and runni coils - Dismantle and assemble battery truck parts an troubleshoot them - Practice welding with oxy-acetylene and liquefi gas	2. Lectures for direct and open scientific discussion between lecturers and students 3. Practical application of the lectures in the laboratories specific to the subject 4.Student discussion sessions addressing specific technical problems	final exams, writing repo daily preparation, and pop quiz

11- Course Evaluation

The annual pursuit is(40) and distributed as follows Theory **(30)** , practical **(–)** , evaluation task **(10)**, **The final Exam** (60) , Theory **(60)** , practical **(–)**

12- Learning and Teaching Resources

Required textbooks (curricular books, if any)	Electrical Laboratory Workbook
Main references (sources)	**Electronics Components**
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	**IEEE Xplore Digital Library – ieeexplore.ieee.org** **ScienceDirect (Elsevier)**

Course Description Form

1- Course Name:
Digital Electronic
2- Course Code:

3- Semester / Year:
Semester
4- Description Preparation Date:
1/3/ 2026
5- Available Attendance Forms:
Attendance only
6- Number of Credit Hours (Total) / Number of Units (Total)
Total (2) Lab.( ) Theory (2) , 2 units per semester
7- Course administrator's name (mention all, if more than one name)
Name: asst. prof:Arkan J. Yosif **Email: a.alhachim@stu.edu.iq**
8- Course Objectives

Course Objectives	• Understanding the basic principles of digital electronics. • Learning logic circuits and digital programming. • Learning digital systems and their specific codes. • Getting to know logic gates..

9- Teaching and Learning Strategies	
Strategy	1-Cooperative Concept Mapping Teaching Strategy 2- Brainstorming Strategy 3- Note-Taking Teaching Strategy

10- Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1st 2nd 3rd 4th	2h 2h 2h 2h	After studying curriculum، the students will be able: ● Understanding the	**Knowledge: The student will get to know:** Number Systems Binary Codes Digital Arithmetic Logic Gates and Related Devices	**1.** Theoretical lectures 2. Lectures for direct and open	Monthly, midterm, and final exams, writing reports daily preparat

5th **6th** **7th** **8th** **9th** **10th** **11th** **12th** **13th** **14th**	**2h** **2h** **2h** **2h** **2h** **2h** **2h** **2h** **2h** **2h**	basic rules of the English language. ● Acquiring English speaking skills. ● Gaining skills in dealing with English terminology. ●Acquiring skills in writing a CV in English.	Logic Families **Skills: students will able** Boolean Algebra and Simplification Techniques Arithmetic Circuits Multiplexers and Demultiplexers Programmable Logic Devices Flip-Flops and Related Devices J-K Flip-Flop as D Flip-Flop **Will enable the student to know** Counters and Registers Counters and Registers Data Conversion Circuits – D/A and A/D Converters Data Conversion Circuits – D/A and A/D Converters	scientific discussion between lecturers and students 3. Practical application of the lectures in the laboratories specific to the subject 4.Student discussion sessions addressing specific technical problems	and pop quizzes

11- Course Evaluation

The annual pursuit is(40) and distributed as follows Theory **( )** , practical **(40)** , evaluation task **(10**), **The final Exam** (50) , Theory **( )** , practical **(50)**

12- Learning and Teaching Resources

Required textbooks (curricular books, if any)	**Digital Electronics Workbook**
Main references (sources)	**Digtal Electronics**
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	**Recommended supporting books and referen (cultural magazines)**

Second stage

Course Description Form

1- Course Name:
Industrial Installation
2- Course Code:

3- Semester / Year:
Semester
4- Description Preparation Date:
1/3/ 2026
5- Available Attendance Forms:
Attendance only
6- Number of Credit Hours (Total) / Number of Units (Total)
Total (4) Lab.(2) Theory (2) , 4 units per semester
7- Course administrator's name (mention all, if more than one name)
Name: asst. teacher£: Muwaffaq Jameel Salih **Email** : **muwaffaq.jameel@stu.edu.iq**
8- Course Objectives

Course Objectives	• Understanding the basic principles of electrical installations. • Learning methods of laying electrical cables. • Knowing the protection of electric motors. • Learning the design and calculation of electrical lighting for ha workshops, and spaces.

9- Teaching and Learning Strategies

Strategy	1- Cooperative Concept Mapping Teaching Strategy 2- Brainstorming Strategy 3- Note-Taking Teaching Strategy

10- Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1st 2nd 3rd 4th 5th 6th	2h 2h 2h 2h 2h 2h	After studying curriculumو the students will be able: 1- Understanding the basic principles of circu 2- Analyzing and designing simple electr circuits 3- Acquiring skills to u tools and devices for	Types of cables according to the type of insulation Methods of laying cables and repairing faults Protection of electric motors Protection against overcurrents Protection from load loss and dropCircuit breakers and their types Air pressure control panel / substatic	**1.** Theoretical lectures 2. Lectures for direct and open scientific discussion between lecturers and students 3. Practical application of the lectures in the laboratories specific	Monthly, midterm, and final exams, writing reports, daily preparat and pop quizzes

7th **8th** **9th** **10th** **11th** **12th** **13th** **14th** **15th**	**2h** **2h** **2h** **2h** **2h** **2h** **2h** **2h** **2h**	circuit analysis 4-Developing engineer thinking and applying theories to solve problems.	Fundamentals of optical engineering Solved questions on how to design lighting Comparison of grounded and isolate systems Voltage drop in single-phase and three-phase feeders Solved questions on calculating voltage drop Study of electrical wiring systems Establishment of hazardous location Types of grounding	to the subject 4.Student discussion sessions addressing specific technical problems	

11- Course Evaluation	
The annual pursuit is(50) and distributed as follows Theory **(20)** , practical **(20)** , evaluation task **(10)**, **The final Exam** (50) , Theory **(40)** , practical **(10)**	
12- Learning and Teaching Resources	
Required textbooks (curricular books, if any)	**2- Electrical installation technology (by Michael Neidle**
Main references (sources)	**1- Electrical installation and workshop technology) Vol. I, II, III (by F.G. Thompson).**
Recommended books and references (scientific journals, reports…)	**1-MIT (Massachusetts Institute of Technology) – ocw.mit.edu**
Electronic References, Websites	**IEEE Xplore Digital Library – ieeexplore.ieee.org** **ScienceDirect (Elsevier)**

Course Description Form

1- Course Name:
Power plants and their protection
2- Course Code:
3- Semester / Year:
Semester
4- Description Preparation Date:
1/3/ 2026

5- Available Attendance Forms:

Attendance only

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

Total (4) Lab.(2) Theory (2) , 4 units per semester

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

Name: asst. teacherf: Firas H. Jasim

Email : **fhasim2006@gmail.com**

8- Course Objectives

Course Objectives	• Understanding the basic principles of electrical machines. • Studying the properties of electrical loads. • Understanding the control of the speed of electric motors. • Knowing electrical transformers and performing tests on them.

9- Teaching and Learning Strategies

Strategy	1- Cooperative Concept Mapping Teaching Strategy 2- Brainstorming Strategy 3- Note-Taking Teaching Strategy

10-Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1st 2nd 3rd 4th 5th 6th 7th 8th	2h 2h 2h 2h 2h 2h 2h 2h	After studying curriculumو the students will be able: 1- Understanding the basic principles of circu 2- Analyzing and designing simple electr circuits 3- Acquiring skills to u tools and devices for circuit analysis 4-Developing engineer	Magnetic Circuits Basic Principles of Direct Current Types of Direct Current Machines - Separately Excited Electromotive Force Connecting Direct Current Generator Parallel Study of Load Properties of Types of Direct Current Machines Direct Current Motors Torque on the Armature and on the Shaft	1. Theoretical lectures 2. Lectures for direct and open scientific discussion between lecturers and students 3. Practical application of the lectures in the laboratories specific to the subject 4.Student discussion	Monthly, midterm, and final exams, writing reports, daily preparat and pop quizzes

9th **10th** **11th** **12th** **13th** **14th** **15th**	**2h** **2h** **2h** **2h** **2h** **2h** **2h**	thinking and applying theories to solve problems.	General Properties of Speed and Tor for Shunt Motors Control of Speed of Direct Current Machines Comparison between Direct Current Motors and Generators Electrical Transformers Open and Short Circuit Test Autotransformer - Problems Three-Phase Transformers	sessions addressing specific technical problems	

11-Course Evaluation	
The annual pursuit is(50) and distributed as follows Theory **(20)** , practical **(20)** , evaluation task **(10)**, **The final Exam** (50) , Theory **(40)** , practical **(10)**	
12-Learning and Teaching Resources	
Required textbooks (curricular books, if any)	**2- Electrical installation technology (by Michael Neidle**
Main references (sources)	**1- Electrical installation and workshop technology) Vol. I, II, III (by F.G. Thompson).**
Recommended books and references (scientific journals, reports…)	**1-MIT (Massachusetts Institute of Technology) – ocw.mit.edu**
Electronic References, Websites	**IEEE Xplore Digital Library – ieeexplore.ieee.org** **ScienceDirect (Elsevier)**

Course Description Form

13-Course Name:
Electrical Machines
14-Course Code:
15-Semester / Year:
Semester
16-Description Preparation Date:
1/3/ 2026
17-Available Attendance Forms:
Attendance only
18-Number of Credit Hours (Total) / Number of Units (Total)

Total (5) Lab.(3) Theory (2) , 5 units per semester

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

Name: asst. teacherf: Ahmed K. Jasim

Email : **ahmed.khalf @gmail.com**

20-Course Objectives

Course Objectives	• Understanding the basic principles of establishing power plants. • Understanding how electrical energy is generated. • Acquiring skills in calculating tension and sag for overhead lines. • Developing engineering thinking in calculating capacitance and inductar for ground cables.

21-Teaching and Learning Strategies

Strategy	4- Cooperative Concept Mapping Teaching Strategy 5- Brainstorming Strategy 6- Note-Taking Teaching Strategy

22-Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1st 2nd 3rd 4th 5th 6th 7th 8th 9th 10th 11th	3h 3h 3h 3h 3h 3h 3h 3h 3h 3h 3h 3h 3h	After studying curriculumو the students will be able: 1- Understanding the basic principles of circu 2- Analyzing and designing simple electr circuits 3- Acquiring skills to u tools and devices for circuit analysis 4-Developing engineer thinking and applying theories to solve problems.	• The student learns how to generate electrical energy. • The student learns about the types power plants Bus bar system Overhead lines Calculating the basic elements of overhead lines Solving various problems. B. Skill objectives related to the cours • The ability to design experiments, conduct them, analyze data, and interpret it. • The ability to identify, formulate, a solve problems.	1. Theoretical lectures 2. Lectures for direct and open scientific discussion between lecturers and students 3. Practical application of the lectures in the laboratories specific to the subject 4.Student discussion sessions addressing specific technical problems	Monthly, midterm, and final exams, writing reports, daily preparat and pop quizzes

12th **13th** **14th** **15th**	**3h** **3h** **3h**		• Mastery of the necessary mathematical, basic, and engineering sciences. • The ability to use the techniques ar skills required in work.		

23-Course Evaluation	
The annual pursuit is(50) and distributed as follows Theory **(20)** , practical **(20)** , evaluation task **(10)**, **The final Exam** (50) , Theory **(40)** , practical **(10)**	
24-Learning and Teaching Resources	
Required textbooks (curricular books, if any)	**Electrical Machines Work by Brian Scaddan**
Main references (sources)	**stanford.edu** **cu.edu.eg**
Recommended books and references (scientific journals, reports…)	**1-MIT (Massachusetts Institute of Technology) – ocw.mit.edu**
Electronic References, Websites	**ScienceDirect (Elsevier)**

25-Course Name:
Fundamentals of Power Electronics
26-Course Code:
27-Semester / Year:
Semester
28-Description Preparation Date:
1/3/ 2026
29-Available Attendance Forms:
Attendance only
30-Number of Credit Hours (Total) / Number of Units (Total)
Total (5) Lab.(3) Theory (2) , 5 units per semester
31-Course administrator's name (mention all, if more than one name)
Name: asst. teacherf: Humam K. Kadhim **Email** : **Humam.alhasan@stu.edu.iq**

32-Course Objectives

Course Objectives	❖ **Distinguishing between general electronic circuits and power electronics devic** ❖ **Understanding the main functions of power electronics, controlling power and converting it.** ❖ **Using transistors for switching control.** ❖ **Understanding the various applications of Unijunction Transistor (UJT) circu and operational amplifiers.** ❖ **Learning the structure, functions, circuits, and types of SCRs.** ❖ **Understanding the different types of power conversion and distinguishing between them: AC-DC, DC-DC, DC-AC, AC-AC (transformers).** ❖ **Connecting the most important power electronics circuits in the laboratory, a measuring their parameters and characteristics.**

33-Teaching and Learning Strategies

Strategy	7- Cooperative Concept Mapping Teaching Strategy 8- Brainstorming Strategy 9- Note-Taking Teaching Strategy

34-Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1st 2nd 3rd 4th 5th 6th 7th 8th 9th 10th 11th 12th 13th 14th 15th	3h 3h 3h 3h 3h 3h 3h 3h 3h 3h 3h 3h 3h 3h 3h 3h	After studying curriculumو the students will be able: 1- Understanding the basic principles of circu 2- Analyzing and designing simple electr circuits 3- Acquiring skills to u tools and devices for circuit analysis 4-Developing engineer thinking and applying theories to solve problems.	• Distinguishing between general electronic circuits and power electro devices. • Understanding the main functions power electronics, power control, an conversion. • Using transistors for switching cont • Understanding the various applications of Ultra-Junction Transistors (UJT) circuits and operational amplifiers. • Learning the structure, functions, circuits, and types of SCRs. • Understanding different types of power conversion and distinguishing between them: AC-DC, DC-DC, DC-AC AC-AC (converters). • Connecting the most important po electronics circuits in the laboratory,	**1.** Theoretical lectures 2. Lectures for direct and open scientific discussion between lecturers and students 3. Practical application of the lectures in the laboratories specific to the subject 4.Student discussion sessions addressing specific technical problems	Monthly, midterm, and final exams, writing reports, daily preparat and pop quizzes

			and measuring their parameters and characteristics.		

35-Course Evaluation	
The annual pursuit is(50) and distributed as follows Theory **(20)** , practical **(20)** , evaluation task **(10)**, **The final Exam** (50) , Theory **(40)** , practical **(10)**	
36-Learning and Teaching Resources	
Required textbooks (curricular books, if any)	**Fundamentals of Power Electronics by Dragan Maksimović, - R**
Main references (sources)	**stanford.edu** **cu.edu.eg**
Recommended books and references (scientific journals, reports…)	**1-MIT (Massachusetts Institute of Technology) – ocw.mit.edu**
Electronic References, Websites	**ScienceDirect (Elsevier)**

Course Description Form

1- Course Name:
Maintenance Workshop
2- Course Code:
3- Semester / Year:
year
4- Description Preparation Date:
1/3/ 2026
5- Available Attendance Forms:
Attendance only
6- Number of Credit Hours (Total) / Number of Units (Total)
Total (3) Lab.(3) Theory ( ) , 3 units per semester
7- Course administrator's name (mention all, if more than one name)
Name: asst. teacherf: Mohammed S. Yonis **Email** : mohammed.sadiq@stu.edu.iq

8- Course Objectives

Course Objectives	• General Objective: Teach the student the methods of winding electric motors • Specific Objective: The student will be able to identify the methods of winding electric motors, handle insulation, perform measurements and testing, and wind induction motors and the stator of a three-phase motor.

9- Teaching and Learning Strategies

Strategy	• Cooperative Concept Mapping Teaching Strategy • Brainstorming Strategy • Note-Taking Teaching Strategy

10-Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1st 2nd 3rd 4th 5th 6th 7th 8th 9th 10th 11th 12th 13th 14th 15th	3h 3h 3h 3h 3h 3h 3h 3h 3h 3h 3h 3h 3h 3h 3h	After studying curriculumو the students will be able: 1- Understanding the basic principles of circu 2- Analyzing and designing simple electr circuits 3- Acquiring skills to u tools and devices for circuit analysis 4-Developing engineer thinking and applying theories to solve problems.	• The student learns during assembling DC machines how to clean the surface of the units test the contact of parts • The student learns the stator windi of a DC generator varnish insulation field windings winding the coils and installing the single-pole units full testing, studying three-terminal transformers with the specific skill objectives of th course • The ability to prepare and cut iron core sheets conduct experiments, analyze data, a interpret them. • The ability to determine polarity test and continuity test • Mastery of the sciences rewinding the stator windings of a three-phase induction motor • The ability to	1. Theoretical lectures 2. Lectures for direct and open scientific discussion between lecturers and students 3. Practical application of the lectures in the laboratories specific to the subject 4.Student discussion sessions addressing specific technical problems	Monthly, midterm, and final exams, writing reports, daily preparat and pop quizzes

			wind motors and test insulation node and leakage		

11-Course Evaluation	
The annual pursuit is(50) and distributed as follows Theory **( )** , practical **(50)** , evaluation task **(10)**, **The final Exam** (50) , Theory **( )** , practical **(50)**	
12-Learning and Teaching Resources	
Required textbooks (curricular books, if any)	**Electrical Machines**
Main references (sources)	**stanford.edu** **cu.edu.eg**
Recommended books and references (scientific journals, reports…)	**1-MIT (Massachusetts Institute of Technology) – ocw.mit.edu**
Electronic References, Websites	**ScienceDirect (Elsevier)**

Course Description Form

1 Course Name:
Computer Fundamentals/2
2- Course Code:
3- Semester / Year:
Semester
4- Description Preparation Date:
1/3/ 2026
5- Available Attendance Forms:
Attendance only
6- Number of Credit Hours (Total) / Number of Units (Total)
Total (2) Lab.(2) Theory ( ) , 2 units per semester
7- Course administrator's name (mention all, if more than one name)
Name: programmer :Arwa A. AbdulRahman **Email:** **mustafaa.alhemeedawi@uokufa.edu.iq**
8- Course Objectives

Course Objectives	● Studying the basic components of the computer ● Studying the Excel and Word programs ● Studying all the types of the functions in the Excel program

9- Teaching and Learning Strategies

Strategy	1- Cooperative Concept Mapping Teaching Strategy 2- Brainstorming Strategy 3- Note-Taking Teaching Strategy

10- Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1st 2nd 3rd 4th 5th 6th 7th 8th 9th 10th 11th 12th 13th 14th 15th	2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h	After studying curriculumو the students will be able: ● Studying the basic components of the computer ● Studying the Excel a Word programs ● Studying the types scientific functions in Excel	**Knowledge: The student will get to kn** Working with Excel Page layout and margins, etc. Types of input data Formatting and alignment commands Hiding and showing rows **Skills** Ability to use functions and relative cells Ability for charts and printing **Will enable the student to**: Learn networks, their types, and protocol The Internet and its development Opening browsers Dealing with web addresses How to search for information on the network Downloading files from the Internet Creating email Handling viruses	**1.** Theoretical lectures 2. Lectures for direct and open scientific discussion between lecturers and students 3. Practical application of the lectures in the laboratories specific to the subject 4.Student discussion sessions addressing specific technical problems	Monthly, midterm, final exams, writing repor daily preparation, pop quizzes

11- Course Evaluation

The annual pursuit is(40) and distributed as follows Theory **( )** , practical **(50)** , evaluation task **(10)**, **The final Exam** (50) , Theory **( )** , practical **(50)**	
12- Learning and Teaching Resources	
Required textbooks (curricular books, if any)	**The institute's library for obtaining additional curriculum resources.**
Main references (sources)	**1- Computer Workbook for second Grade**
Recommended books and references (scientific journals, reports…)	**1-MIT (Massachusetts Institute of Technology) – ocw.mit.edu**
Electronic References, Websites	**IEEE Xplore Digital Library – ieeexplore.ieee.org**

Course Description Form

1- Course Name:
English Language/2
2- Course Code:
2– Semester / Year:
Semester
3– Description Preparation Date:
1/3/ 2026
4- Available Attendance Forms:
Attendance only
5- Number of Credit Hours (Total) / Number of Units (Total)
Total (2) Lab.( ) Theory (2) , 2 units per semester
6- Course administrator's name (mention all, if more than one name)
Name: asst. prof. : Dr. Haider M. Dawood **Email: haider.mohammed @stu.edu.iq**
7– Course Objectives

Course Objectives	● Understanding the basic rules of the English language. ● Acquiring English speaking skills. ● Gaining skills in dealing with English terminology. ● Acquiring skills in writing a CV in English.

8- Teaching and Learning Strategies

Strategy	1-Cooperative Concept Mapping Teaching Strategy 2- Brainstorming Strategy 3- Note-Taking Teaching Strategy

9- Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1st 2nd 3rd 4th 5th 6th 7th 8th 9th 10th 11th 12th 13th 14th	2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h	After studying curriculum و the students will be able: ● Understanding the basic rules of the English language. ● Acquiring English speaking skills. ● Gaining skills in dealing with English terminology. ●Acquiring skills in writing a CV in English.	**Knowledge: The student will get to know:** 1- getting to know you 2- the way we live, tenses 3- it all went wrong 4- let's go shopping **Skills: students will able** 5- what do You want to do 6- What's it like 7- Perfect and past simple **Will enable the student to know** 8-moadal auxiliary 9- going Places 10- Verbs Patterns 11 infinitive 12- dreams and reality 13- earning a living 14- family ties	**1.** Theoretical lectures 2. Lectures for direct and open scientific discussion between lecturers and students 3. Practical application of the lectures in the laboratories specific to the subject 4.Student discussion sessions addressing specific technical problems	Monthly, midterm, and final exams, writing reports daily preparati and pop quizzes

10- Course Evaluation

The annual pursuit is(40) and distributed as follows Theory **(30)** , practical **(-)** , evaluation task **(10)**, **The final Exam** (60) , Theory **(60)** , practical **(-)**

11- Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	**New Headway Elementry by Liz and John Soars, 4th edition**
Recommended books and references (scientific journals, reports…)	**1-Englih Grammer in use**
Electronic References, Websites	**IEEE Xplore Digital Library – ieeexplore.ieee.org ScienceDirect (Elsevier)**

Course Description Form

13-	Course Name:
	The crimes of the Baath regime in Iraq
14-	Course Code:
15-	Semester / Year:
	Semester
16-	Description Preparation Date:
	1/3/ 2026
17-	Available Attendance Forms:
	Attendance only
18-	Number of Credit Hours (Total) / Number of Units (Total)
	Total (2) Lab.( ) Theory (2) , 2 units per semester
19-	Course administrator's name (mention all, if more than one name)
	Name: asst. teacher. : Alaa A. Salih **Email: alaa.abd @gmail.com**
20-	Course Objectives

Course Objectives	• The student knows: Violations by the Ba'athist regime of public rights and freedoms • The student understands: The impact of the transitional period in combating the policy tyranny • The student will get to know: A descriptive overview of the political systems in I (1921-2003)

21- Teaching and Learning Strategies

Strategy	1-Cooperative Concept Mapping Teaching Strategy 2- Brainstorming Strategy 3- Note-Taking Teaching Strategy

22- Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1st 2nd 3rd 4th 5th 6th 7th 8th 9th 10th 11th 12th 13th 14th	2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h	After studying curriculum و the students will be able: ● Understanding the basic rules of the English language. ● Acquiring English speaking skills. ● Gaining skills in dealing with English terminology. ●Acquiring skills in writing a CV in English.	**Knowledge: The student will learn about** Violations of rights and freedoms History of the ruling regimes in Iraq Violations of the Ba'ath regime The impact of the transitional phase in combating the policy of tyranny **Skill: The student will be able to deal with** The psychological field The social field The relationship between religion and the st Culture, media, and the militarization of society **The student will be able to gain a cultural background from:** Studying the impact of oppression and wars on the environment The use of internationally banned weapons Mass graves and the destruction of places of worship according to their beliefs and ethnicity	**1.** Theoretical lectures 2. Lectures for direct and open scientific discussion between lecturers and students 3. Practical application of the lectures in the laboratories specific to the subject 4.Student discussion sessions addressing specific technical problems	Monthly, midterm, and final exams, writing repor daily preparation, pop quizzes

23- Course Evaluation

The annual pursuit is(40) and distributed as follows Theory **(30)** , practical **(-)** , evaluation task **(10)**, **The final Exam** (60) , Theory **(60)** , practical **(-)**

24- Learning and Teaching Resources	
Required textbooks (curricular books, if any)	**The institute's library to obtain additional curricul resources**
Main references (sources)	**The crimes of the Ba'ath Party 2023**
Recommended books and references (scientific journals, reports…)	**Sources Available on the internet**
Electronic References, Websites	**IEEE Xplore Digital Library – ieeexplore.ieee.org ScienceDirect (Elsevier)**

Course Description Form

1- Course Name:
Programmable Logic controllers
2- Course Code:
2– Semester / Year:
Semester
3– Description Preparation Date:
1/3/ 2026
4- Available Attendance Forms:
Attendance only
5- Number of Credit Hours (Total) / Number of Units (Total)
Total (3) Lab.(2) Theory (1) , 2 units per semester
6- Course administrator's name (mention all, if more than one name)
Name: asst. prof. : Dr. Muaad N. Hussein **Email: muaad.hussein@stu.edu.iq**
7– Course Objectives

Course Objectives	: **1. Explain the working principles of PLCs to enable students to write cont programs.** **2. Enhance problem-solving skills by analyzing industrial issues and designing control systems.** **3. Prepare students for the labor market**..

8- Teaching and Learning Strategies

Strategy	1-Cooperative Concept Mapping Teaching Strategy 2- Brainstorming Strategy 3- Note-Taking Teaching Strategy

9- Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1st 2nd 3rd 4th 5th 6th 7th 8th 9th 10th 11th 12th 13th 14th	2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h 2h	After studying curriculum و the students will be able: ● Understanding the basic rules of the English language. ● Acquiring English speaking skills. ● Gaining skills in dealing with English terminology. ●Acquiring skills in writing a CV in English.	**Knowledge: The student learns:** **•the basics of programmable logic controller (PLC) programming.** **• The student learns the principles of the operati of programmable logic controllers (PLC) and the main components.** **• The student becomes familiar with the types of sensors, inputs, and outputs used with PLC syste** **• The student acquires skills in designing logic diagrams (Ladder Diagram) and programming in STL or FBD languages.** **Specific course skills objectives:** *** The ability to design and implement control programs using PLC.** **• The ability to analyze faults and perform maintenance for industrial control systems.** **The student will be able to:** **• Master the principles of logical control and the design of automatic systems.** **• Master the use of modern tools and software in programming and operating PLC systems.**	**1.** Theoretical lectures 2. Lectures for direct and open scientific discussion between lecturers and students 3. Practical application of the lectures in the laboratories specific to the subject 4.Student discussion sessions addressing specific technical problems	Monthly, midterm, and final exams, writing report daily preparat and pop quizze

10- Course Evaluation

The annual pursuit is(50) and distributed as follows Theory **(20)** , practical **(20)** , evaluation task **(10)**, **The final Exam** (50) , Theory **(40)** , practical **(10)**

11- Learning and Teaching Resources	
Required textbooks (curricular boo if any)	**"Programming Programmable Controllers"** **Publisher: General Organization for Technical Education and Vocational Training** **"Programmable Logic Controllers (PLC)"** **Author: Nader Abu Korda** **Publisher: Arab Pen House for Publishing, 2011** **"Programmable Logic Controllers (PLC)"** **Author: Bashoqi Marisha** **Publisher: Shua'a Publishing and Sciences, 2003** **• Frank D. Petruzella, "Programmable Logic Controllers"**
Main references (sources)	**"Programmable Digital Controllers and Their Applications"** **Author: Engineer Wamid Riyad Abdel Azim** **"Programmable Logic Controllers (PLC)"** **Publisher: Afkar Company for Industrial Support** **IEEE Transactions on Industrial Electronics**
Recommended books and references (scientific journals, reports…)	**"Programmable Logic Controllers (PLC)"** **Publisher: Schneider Electric** **Tools for PLC programming** **https://www.plcdev.com**
Electronic References, Websites	**IEEE Xplore Digital Library – ieeexplore.ieee.org** **ScienceDirect (Elsevier)**