Academic Program Description Form

University : Southern Technical University

Faculty/Basra Technical Institute

Scientific Department of Electrical Techniques

Academic or Professional Program : Diploma Degree

Final Certificate Name: Diploma Degree in Electrical Techniques

Academic System: Semester

Description Preparation Date: 1/ 6 / 2025

File Completion Date: 1 / 6 / 2025

Signature:

Head of Department Name:

Dr. Maad N, Hussain

Date:1 / 6 / 2025

Signature:

Scientific Associate Name:

Dr. Abdul Nasser A. Jabbar

Date: 1 / 6 / 2025

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date: 1-6-2025

Signature:

Anwar abdel Khaleq Abboud

Approval of the Dean

Dr. Diyah K. Shary

Date: 1/6

Signature: 1/6/2025

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 : **Southern Technical University**

Faculty/Basra Technical Institute

Scientific Department of Electrical Techniques

Academic or Professional Program : **Diploma Degree**

Final Certificate Name: **Diploma Degree in Electrical Techniques**

Academic System : **semester**

Description Preparation Date: **1/6/2025**

File Completion Date: **1/6/2025**

Signature:

Head of Department Name:

Dr. Maad N, Hussain

Date: **1/6/2025**

Signature:

Scientific Associate Name:

Dr. Abdul Nasser A. Jabbar

Date: **1/6/2025**

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date:

Signature:

Approval of the Dean

Dr. Diyah K. Shary

Date :

Signature:

TEMPLATE FOR PROGRAMME SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

PROGRAMME SPECIFICATION

This Program Specification provides a concise summary of the main features of the program and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It is supported by a specification for each course that contributes to the program.

1. Teaching Institution	Southern Technical University
2. University Department/Centre	Basra Technical Institute
3. Program Title	Electrical Techniques
4. Title of Final Award	*Diploma Degree in Electrical Techniques*
5. Modes of Attendance offered	Semester System
6. Accreditation	Accreditation Board for and Technology
7. Other external influences	The Department is on going with the development of the curriculum in line with the latest scientific developments in the field of electrical techniques.
8. Date of production/revision of this specification	٢9/٥/202٥

9. Aims of the Program

Understand the basic principles operation of power systems beginning from generation plants to loads
Ability to analyze power systems in the main and secondary generating plants and to make the necessary measurements and the ability to operate and control the generation plants
Design, implementation, operation and maintenance of control systems for power systems.
Ability to analyze power systems in the main and secondary generating plants and to make the necessary measurements and the ability to operate and control the generation plants
Design the necessary laboratory units for the requirements of graduate students
The ability to operate and control the generation plants.

10. Learning Outcomes, Teaching, Learning and Assessment Methods

A. Knowledge and Understanding

A1. Prepare qualified technical staff to work in power generation and transmission stations

A2. Prepare qualified technical staff to work in power generation and transmission stations

A3. Learn project management techniques

A4. Learn about the latest technologies that support the development of electric power plants

A5. Prepare qualified technical staff to operate and maintain the electrical and electronic equipment attached to these stations

B. Subject-specific skills

B1. Train the students on project management techniques

B2. Preparing highly qualified graduates with excellent education that combines deep knowledge and basic skills

B3. Graduates excel as technicians and leaders in their profession , and have the potential to pursue lifelong learning, basic research, applied research and public service.

Teaching and Learning Methods

1- Use of electronic devices such as SHOW DATA
2- Using quizzes for practice and assessment
3- A student discussion and home work

Assessment methods

1- Classroom assessment
2- Daily and weekly test
3- Semester exam
4- Assessment according student attendance

C. Thinking Skills

C1. Develop the student's ability to acquire new information by asking questions.
C2. Stimulate scientific thinking about what is deeper than the given information.
C3. A comparative study to find out the similarities and differences.
C4. Stimulating the skill of classifying things into groups according to common characteristics

Teaching and Learning Methods

Laboratories can develop students' thinking skills, intellectual questions and tests. In addition, interaction with other disciplines such as applications of electrical power systems, artificial intelligence, and network security.

Assessment methods

1. Theory exam.
2. Practical exam
3. Writing lab reports and scientific assignment.

D. General and Transferable Skills (other skills relevant to employability and personal development)

D1. Develop the student's ability to design and implement projects.
D2. Improve team work skills
D3. Develop the student's ability to analyze and address problems

Teaching and Learning Methods

1- Lectures
2- Lab work
3- New and updated resources
4- Use of electronic devices such as SHOW DATA

Assessment Methods

1. Theory exam.
2. Practical exam
3. Writing lab reports and scientific assignment.

11. Program Structure 2023/2024

12. Awards and Credits

Year 1- Semester 1			
Course or Module Title	Credit rating		
	Theory	Lab.	Total
Electrical Circuits/1	4	2	2
Electrical Installation	4	2	2
Principle of Electronics	4	2	2
Computer Fundamentals/1	2	2	-
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		
	Theory	Lab.	Total
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		
	Theory	Lab.	Total
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

13. Personal Development Planning

- Scientific and academic research
- Seminars, workshops and conferences
- Training courses

14. Admission criteria .

Centralized admission process

15. Key sources of information about the program

Keeping pace with the labor market

Curriculum Skills Map																	
please tick in the relevant boxes where individual Program Learning Outcomes are being assessed																	
Program Learning Outcomes																	
Year / Level	Course Title	Core (C) Title or Option (O)	Knowledge and understanding				Subject-specific skills				Thinking Skills				General and Transferable Skills (or) Other skills relevant to employability and personal development			
			A2	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4	D1	D2	D3	D4
	Electrical Circuits/1	C	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√
	Electrical Installation	**C**	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√
	Principle of Electronics	**C**	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√
	Computer Fundamentals	**C**	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√
	Mathematics	**C**	√	√	√	√						√	√	√		√	√	√
	Occupational Safety	**O**	√	√	√	√	√	√	√	√						√	√	√
	Engineering Drawing	**O**	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√
	English Language	**O**	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√
	Human Rights and Democracy	**O**	√	√	√	√												

	Workshops	**C**	**√**	**√**	**√**	**√**							**√**	**√**		**√**	**√**	**√**

TEMPLATE FOR COURSE SPECIFICATION COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the program specification.

1. Teaching Institution	**Southern Technical University- Basra Technological Technical Institute**
2. University Department/Centre	Electrical Techniques
3. Course title	Electrical Circuits
4. Modes of Attendance offered	Lecture 2 hours and Lab 2 hours per week
5. Semester/Year	Semester 1& 2 /Year 1
6. Number of hours tuition (total)	120
7. Date of production/revision of this specification	2025/05/29
8. Aims of the Course	
1- Study the basics of electrical	
2- Study the different methods of analyzing electrical circuits	
3- Train students on how connect electrical and electronic circuits	
4- Conducting various measurements of the circuit’s variables	

10· Learning Outcomes, Teaching ,Learning and Assessment Method

A- Knowledge and Understanding

A1- Study the basic components of electrical circuits
A2- Estimate and measure the current, potential difference and electrical power of electrical circuits
A3- Studying the different types of connection of electrical circuits

B. Subject-specific skills

B1- Improve the student skills to deal with electrical circuits
B2- Learn the skills of measuring circuit variables
B3 - Electronic circuit design training
B4 - Recognize complex electrical circuits

Teaching and Learning Methods

- Lectures
- Practical experiments
- Preparing reports
- Books and electronic books
- Supportive websites

Assessment methods

1- Classroom assessment
2- Daily and weekly test
3- Semester exam
4- Assessment according student attendance

C. Thinking Skills

C1- Develop the student's ability to do scientific research
C2 - Develop the student's ability to cooperate
C3- Develop the student's ability to design electronic circuits
C4- Motivating the student's ability to address the electronic problems he/she faces

Teaching and Learning Methods

1- Lectures
2- Lab work
3- New and updated resources
4- Use of electronic devices such as SHOW DATA

Assessment methods

1- Classroom assessment
2- Daily and weekly test
3- Semester exam
4- Assessment according student attendance

D. General and Transferable Skills (other skills relevant to employability and personal development) D1. Preparing an mindset that can keep pace with rapid technological development D2. Preparing D3. Training on the skills of completing duties within the specified time D4. Develop general skills in dealing with electrical devices and their maintenance

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	• Fundamentals of electrical By B. L. Theraja • Electric circuit Fundamentals, sixth edition by Floid • Introductory Circuit by Boylasted
Special requirements (include for example workshops, periodicals, IT software, websites)	
Community-based facilities (include for example, guest Lectures , internship , field studies)	

1. Teaching Institution	**Southern Technical University- Basra Technological Technical Institute**
2. University Department/Centre	Electrical Techniques
3. Course title	Power electronics
4. Modes of Attendance offered	Lecture 2 hours and Lab 2 hours per week
5. Semester/Year	Semester 1& 2 /Year 1
6. Number of hours tuition (total)	120
7. Date of production/revision of this specification	2025/05/29
8. Aims of the Course	
1- Study the Differentiate between the general electronic circuits and power electronic devices.	
2- Understand the main functions of power electronics: Power control and Power conversion	
3- Train students on how connect electrical and electronic circuits	
4- Use the transistors for switching control.	
5- Understand and differentiate between the different kinds of power conversion	

10· Learning Outcomes, Teaching ,Learning and Assessment Method

A- Knowledge and Understanding

A1- Study the basic components of power electronic circuits
A2- Estimate and measure the current, potential difference and electrical power of electrical circuits
A3- Studying the different types of connection of electrical circuits

B. Subject-specific skills

B1- Improve the student skills to deal with electronic circuits
B2- Learn the skills of measuring electronic devices variables
B3 - Electronic circuit design training
B4 - Recognize complex electrical circuits

Teaching and Learning Methods

- Lectures
- Practical experiments
- Preparing reports
- Books and electronic books
- Supportive websites

Assessment methods

1- Classroom assessment
2- Daily and weekly test
3- Semester exam
4- Assessment according student attendance

C. Thinking Skills

C1- Develop the student's ability to do scientific research
C2 - Develop the student's ability to cooperate
C3- Develop the student's ability to design electronic circuits
C4- Motivating the student's ability to address the electronic problems he/she faces

Teaching and Learning Methods

1- Lectures
2- Lab work
3- New and updated resources
4- Use of electronic devices such as SHOW DATA

Assessment methods
1- Classroom assessment 2- Daily and weekly test 3- Semester exam 4- Assessment according student attendance
D. General and Transferable Skills (other skills relevant to employability and personal development) D1. Preparing an mindset that can keep pace with rapid technological development D2. Preparing D3. Training on the skills of completing duties within the specified time D4. Develop general skills in dealing with electrical devices and their maintenance

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	[1] W.Shepherd, and L.Hulley, **Power Electronics and Motor Control**, 2ndedition, Cambridge University Press,1996. [2] S.B.Dewan, **Power Semiconductor Circuits**, New York: Wiley,1975. [3] M.S.Berde,**Thyristor Engineering:AnIntroductory Book on Converters, Inverters, Motor Drives and Other Applications of Thyristors in Electrical Control of Power**, 8th edition, Khanna,1995. [4] M.H.Rashid, **Power Electronics Handbook: Devices, Circuits and Applications**,2nded. Academic Press: Elsevier, 2007. •
Special requirements (include for example workshops, periodicals, IT software, websites)	
Community-based facilities (include for example, guest Lectures , internship , field studies)	

1. Teaching Institution	**Southern Technical University- Basra Technological Technical Institute**
2. University Department/Centre	Electrical Techniques
3. Course title	Industrial installation
4. Modes of Attendance offered	Lecture 2 hours and Lab 2 hours per week
5. Semester/Year	Semester 1& 2 /Year 2
6. Number of hours tuition (total)	120
7. Date of production/revision of this specification	2025/05/29
8. Aims of the Course	
1- Study the Differentiate between the general electronic circuits and power electronic devices.	
2- Understand the main functions of power electronics: Power control and Power conversion	
3- Train students on how connect electrical and electronic circuits	
4- Use the transistors for switching control.	
5- Understand and differentiate between the different kinds of power conversion	

10· Learning Outcomes, Teaching ,Learning and Assessment Method

A- Knowledge and Understanding

A1- Study the basic components of electrical installations
A2- Analyzing the performance of electrical installations and their earthing systems
A3- A study of the earthing system and the performance of electrical installations

B. Subject-specific skills

B1- Improve the student skills to deal with earthling system
B2- Learn the skills of electrical installation
B3 - Electronic circuit design training
B4 - Recognize complex electrical circuits

Teaching and Learning Methods

- Lectures
- Practical experiments
- Preparing reports
- Books and electronic books
- Supportive websites

Assessment methods

1- Classroom assessment
2- Daily and weekly test
3- Semester exam
4- Assessment according student attendance

C. Thinking Skills

C1- Develop the student's ability to do scientific research
C2 - Develop the student's ability to cooperate
C3- Develop the student's ability to design electronic circuits
C4- Motivating the student's ability to address the electronic problems he/she faces

Teaching and Learning Methods

1- Lectures
2- Lab work
3- New and updated resources
4- Use of electronic devices such as SHOW DATA

Assessment methods

1- Classroom assessment
2- Daily and weekly test
3- Semester exam
4- Assessment according student attendance

D. General and Transferable Skills (other skills relevant to employability and personal development)

D1. Preparing an mindset that can keep pace with rapid technological development
D2. Preparing
D3. Training on the skills of completing duties within the specified time
D4. Develop general skills in dealing with electrical devices and their maintenance

12. Infrastructure

Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	[1] W.Shepherd, and L.Hulley, **Power Electronics and Motor Control**, 2ndedition, Cambridge University Press,1996. [2] S.B.Dewan, **Power Semiconductor Circuits**, New York: Wiley,1975. [3] M.S.Berde,**Thyristor Engineering:AnIntroductory Book on Converters, Inverters, Motor Drives and Other**

	Applications of Thyristors in Electrical Control of Power, 8th edition, Khanna,1995. [4] M.H.Rashid, **Power Electronics Handbook: Devices, Circuits and Applications**,2nded. Academic Press: Elsevier, 2007. •
Special requirements (include for example workshops, periodicals, IT software, websites)	
Community-based facilities (include for example, guest Lectures , internship , field studies)	