

وزارة التعليم العالي والبحث العلمي
جهاز الاشراف والتقويم العلمي
دائرة ضمان الجودة والاعتماد الأكاديمي

استمارة وصف البرنامج الأكاديمي للعام الدراسي ٢٠٢٥-٢٠٢٦ للكليات والمعاهد

الجامعة : جامعة شط العرب الاهلية

الكلية \المعهد : الكلية التقنية الهندسية

القسم العلمي : قسم هندسة تقنيات الحاسوب

تاريخ ملء الملف : ٢٠٢٥/٩/١١

كفيع

التوقيع

اسم المعاون العلمي : م. عصام خليل ابراهيم
التاريخ : ٢٠٢٥/٩/١١

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معاون العميد للشؤون العلمية

التوقيع

اسم رئيس القسم : م. عبد الجبار عبد الرزاق
التاريخ : ٢٠٢٥ / ٩ / ١١

دقق الملف من قبل

شعبة ضمان الجودة والأداء الجامعي

اسم مدير شعبة ضمان الجودة والأداء الجامعي

مصادقة السيد العميد

أ.م.د. مازن عبداللّه علوان
عميد الكلية التقنية الهندسية

Academic Program Description (English Version)

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

Academic Program Description Form for the Academic Year 2025-2026 for Colleges and Institutes

Item	Details
University	Shatt Al-Arab Private University
College / Institute	Engineering Technical College
Department	Department of Computer Engineering Techniques
Date of completion	1/9/2025
Head of Department	Asst. Lect. Abdul-Jabbar Abdul-Razzaq
Scientific Assistant Dean	Lect. Essam Khalil Ibrahim
File checked by	Quality Assurance and University Performance Unit
Approved by the Dean	Asst. Prof. Dr. Mazin Abdul-Ilah Alwan

Academic Program Description

This academic program description provides a concise summary of the main features of the program and the learning outcomes that students are expected to achieve, demonstrating whether the program has made the best use of the available opportunities. It is accompanied by a description of each course within the program.

No.	Item	Details
1	Educational institution	Engineering Technical College
2	Scientific department / centre	Department of Computer Engineering Techniques
3	Academic or professional program name	Computer Engineering Techniques – Computer Electronics Branch; Computer Engineering Techniques – Computer Communication Networks Branch
4	Final degree awarded	Bachelor of Technical Engineering
5	Study system (annual / courses / other)	Annual + Bologna
6	Accreditation program	ABET
7	Other external influences	Labour market: many seminars and meetings were held with employers to discuss the academic and applied content. Universities and colleges with similar specializations: through joint working mechanisms that enable communication between teaching staff and students, to reach a shared vision and set plans for developing the academic content.

No.	Item	Details
8	Date of preparing the description	1/9/2025

9. Academic Program Objectives

The program aims to graduate students specialized in computer technical engineering and to prepare them to:

1. Work in fields that require connecting computer networks, such as telecommunications companies, technology companies and educational institutions.
2. Develop the infrastructure of e-government and help overcome technical problems that may arise.
3. Work in industrial establishments, especially in fields that require computerized control operations.
4. Modernize the infrastructure of old production plants, converting their former production-control processes into modern processes controlled by computers and remotely.

10. Required Program Outcomes and Teaching, Learning and Assessment Methods

A. Knowledge objectives

- A1: Knowledge and understanding of communication networks and how to connect them.
- A2: Knowledge and understanding of digital signals and their analysis.
- A3: Knowledge and understanding of computer components, how they are assembled, and how to fix their problems.
- A4: Knowledge and understanding of the electronic circuits of various computerized devices and how to design them.
- A5: Knowledge and understanding of different programming languages and how to use and benefit from them.
- A6: Knowledge of the types of digital controllers and how to program them and design their circuits.

B. Program-specific skill objectives

- B1: Writing and implementing programs for communications, controllers and engineering algorithms.
- B2: Designing and implementing wired and wireless computer networks.
- B3: Diagnosing and repairing faults in computerized devices and their peripherals.

Teaching and learning methods

- Academic lectures: provide the solid foundation on which students' knowledge is developed.
- Practical laboratories and workshops: provide students with the experience needed to develop their practical skills, which is essential for carrying out practical projects correctly, and establish the principles and steps of occupational safety to reduce harm to people and property.

- Curricular training: provides students with direct exposure to the labour market, so they can understand the practical application of the curricula they have studied.

Assessment methods

- Interactive assessment: carried out directly between the student and the instructor; it is one of the main sources of feedback that teaching staff rely on to evaluate the teaching and learning process.
- Periodic written tests: show the instructor how well students follow the academic content and respond to the information and notes given to them.
- Semester exams: the middle stage for assessing the student's engagement with the material received during the semester, in both its academic and practical aspects.
- Final exams: the final stage for assessing the student's engagement with the material received during the academic year, in both its academic and practical aspects.

C. Affective and value objectives

- C1: Fostering a spirit of creativity in students and encouraging them to find innovative solutions to various problems.
- C2: Developing students' ability to work collaboratively in effective teams that achieve outstanding results.
- C3: Developing students' sense of responsibility and their psychological readiness to bear the duties placed on them.
- C4: Developing the values of diligence and perseverance in completing work to reach satisfactory results.

Teaching and learning methods

- Presenting scientific problems and asking students to find more than one solution using different scientific methods, to stimulate their creativity.
- Forming work teams whose results are evaluated and whose membership changes periodically, to build a spirit of cooperation and motivate students to make the effort needed to work under different conditions and with different people.

Assessment methods

- Direct assessment: carried out directly by teaching staff through observing students' engagement and the application of the department's affective objectives, and recording their observations.
- Practical projects and graduation projects: assess the student's ability to achieve, innovate and work in teams, and the results and solutions reached for the scientific problems students face.

D. General and transferable skills (other skills related to employability and personal development)

- D1: Connecting wired and wireless internal and external networks.
- D2: Designing and fabricating printed circuit boards.
- D3: Installing and interfacing computerized communication systems.
- D4: Maintaining personal and industrial computer systems and their attached peripheral systems.

Teaching and learning methods

- Practical laboratories and workshops: provide students with the experience needed to develop their practical skills, which is essential for carrying out practical projects correctly, and establish the principles and steps of occupational safety to reduce harm to people and property.
- Curricular training: provides students with direct exposure to the labour market, so they can understand the practical application of the curricula they have studied.

Assessment methods

- Interactive assessment: carried out directly between the student and the instructor; it is one of the main sources of feedback that teaching staff rely on to evaluate the teaching and learning process.
- Semester exams: the middle stage for assessing the student's engagement with the material during the semester, in both its academic and practical aspects.
- Final exams: the final stage for assessing the student's engagement with the material during the academic year, in both its academic and practical aspects.

11. Program Structure

First Year – First Semester

No.	Course name	Code	Theory	Practical	ECTS
1	Digital Principles	CET1101	2	2	6
2	Principles of Electrical Engineering	CET1102	2	2	6
3	Mathematics I	CET1103	2	2	5
4	Engineering Drawing	CET1104	–	3	5
5	Engineering Workshops	CET1105	–	4	6
6	English Language 1	MTU1002	1	–	2

First Year – Second Semester

No.	Course name	Code	Theory	Practical	ECTS
1	Digital Systems	CET1201	2	2	6
2	Electrical Circuits	CET1202	2	2	6
3	Programming Fundamentals	CET1203	2	2	6
4	Mathematics II	CET1204	2	–	5
5	Democracy and Human Rights	MTU1006	2	–	2
6	Arabic Language	MTU1001	2	–	2
7	Computer Fundamentals	MTU1004	1	1	3

Second Year – First Semester

No.	Course name	Code	Theory	Practical	ECTS
1	Engineering Mathematics	CET2101	2	–	5
2	Object-Oriented Programming	CET2102	2	2	6
3	Computer Architecture and Applications	CET2103	2	2	5
4	Principles of Electronics	CET2104	2	2	5
5	Fundamentals of Communications	CET2105	2	2	5
6	English Language 2	MTU1003	1	–	2
7	Crimes of the Ba'ath Regime	MTU1007	2	–	2

Second Year – Second Semester

No.	Course name	Code	Theory	Practical	ECTS
1	Advanced Engineering Mathematics	CET2201	2	–	5
2	Programming in Python	CET2202	2	2	5
3	Microprocessors	CET2203	2	2	5
4	Analog Communications	CET2204	2	2	5
5	Electronic Circuits	CET2205	2	2	5
6	Instruments and Measurements	CET2206	2	2	5

Third Year – Computer Electronics Branch

No.	Course name	Theory	Practical	ECTS
1	Electronic Systems Simulators	1	2	
2	Engineering Analysis	2	2	6
3	Fundamentals of Control Engineering	2	2	6
4	Power Electronics	2	2	6
5	Real-Time Systems Design	2	2	6
6	Digital Signal Processing	2	2	6
7	Digital Controllers	2	2	6
8	Elective Subject	2	2	6
9	Summer Training	–	–	–

Fourth Year – Computer Electronics Branch

No.	Course name	Theory	Practical	ECTS
1	Intelligent Systems Modelling	2	2	6
2	Advanced Computer Technology	2	2	6

No.	Course name	Theory	Practical	ECTS
3	Computer Interfacing Circuit Design	2	2	6
4	Advanced Digital Electronics	2	2	6
5	Project Management	2	2	6
6	Computer Networks	2	2	6
7	Elective Subject	2	2	6
8	Graduation Project	–	4	4

Third Year – Computer Communication Networks Branch

No.	Course name	Theory	Practical	ECTS
1	Computer Network Simulators	1	2	4
2	Engineering Analysis	2	2	6
3	Fundamentals of Control Engineering	2	2	6
4	Fundamentals of Computer Networks	2	2	6
5	Real-Time Systems Design	2	2	6
6	Digital Signal Processing	2	2	6
7	Digital Communications	2	2	6
8	Elective Subject	2	2	6
9	Summer Training	–	–	–

Fourth Year – Computer Communication Networks Branch

No.	Course name	Theory	Practical	ECTS
1	Computer Network Protocols	2	2	6
2	Information Theory and Coding	2	2	6
3	Mobile Communication Systems	2	2	6
4	Computer and Network Security	2	2	6
5	Project Management	2	2	6
6	Multimedia Computing	2	2	6
7	Elective Subject	2	2	6
8	Graduation Project	–	4	4
9	English Language	1	–	2

12. Personal Development Planning

The approved academic and practical program gives students a basic body of knowledge that enables them to develop themselves continuously. Teaching staff also build students' self-reliance by encouraging them to look for problems within their field and work on solving them,

under staff supervision and follow-up, providing the advice and guidance needed to establish sound foundations for personal development.

13. Admission Criteria (regulations for enrolment in the college or institute)

Admission criteria are set annually by specialized committees of the Ministry of Higher Education and Scientific Research. Students are admitted from:

1. Graduates of the scientific stream (applied and biological) with an average of no less than 77%.
2. Graduates of industrial secondary schools, for the top 10% in Iraq, from the following specializations: computer maintenance, communications, computer networks, computer assembly and maintenance, media technology.
3. Graduates of technical institutes.

14. Main Sources of Information about the Program

1. Specialized scientific books.
2. Academic research.
3. The internet.
4. The accumulated scientific expertise of the department's staff.
5. Feedback from the labour market.

Curriculum Skills Map

Please tick the boxes corresponding to the individual program learning outcomes subject to assessment

Year / Level	Course Code	Course Name	Core or Elective	Knowledge objectives				Program-specific skill objectives				Affective and value objectives				General and transferable skills (employability and personal development)			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4	D1	D2	D3	D4
First Year	CET1101	Digital Principles		✓		✓			✓	✓		✓	✓	✓		✓			✓
	CET1102	Principles of Electrical Engineering		✓	✓	✓		✓	✓	✓			✓	✓	✓		✓	✓	
	CET1103	Mathematics I				✓	✓		✓		✓	✓			✓	✓		✓	✓
	CET1104	Engineering Drawing			✓	✓		✓	✓	✓	✓			✓	✓	✓	✓		✓
	CET1105	Engineering Workshops		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	
	MTU1002	English Language 1		✓	✓	✓			✓	✓	✓		✓	✓	✓	✓	✓		✓
	CET1201	Digital Systems			✓		✓			✓	✓	✓		✓	✓	✓	✓	✓	
	CET1202	Electrical Circuits		✓		✓	✓	✓	✓			✓		✓			✓		✓
	CET1203	Programming Fundamentals		✓	✓	✓		✓	✓	✓			✓	✓	✓		✓	✓	
Second Year	CET2101	Engineering Mathematics		✓		✓			✓	✓		✓	✓	✓		✓			✓
	CET2102	Object-Oriented Programming		✓	✓	✓		✓	✓	✓			✓	✓	✓		✓	✓	
	CET2103	Computer Architecture and Applications				✓	✓		✓		✓	✓			✓	✓		✓	✓
	CET2104	Principles of Electronics			✓	✓		✓	✓	✓	✓			✓	✓	✓	✓		✓
	CET2105	Fundamentals of Communications		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	
		English Language 2		✓	✓	✓		✓	✓	✓			✓	✓	✓		✓	✓	
				✓	✓	✓			✓	✓	✓		✓	✓	✓	✓	✓		✓
					✓		✓			✓	✓	✓		✓	✓	✓	✓	✓	
				✓		✓	✓	✓	✓			✓		✓			✓		✓
Third Year – Computer Electronics Branch		Computer Network Simulators			✓	✓		✓	✓	✓	✓			✓	✓	✓	✓		✓
		Engineering Analysis		✓	✓	✓		✓	✓	✓			✓	✓	✓		✓	✓	
		Engineering Analysis		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	
		Fundamentals of Control Engineering		✓	✓	✓			✓	✓	✓		✓	✓	✓	✓	✓		✓
		Power Electronics			✓		✓			✓	✓	✓		✓	✓	✓	✓	✓	
		Real-Time Systems Design		✓		✓	✓	✓	✓			✓		✓			✓		✓
		Digital Signal Processing		✓		✓			✓	✓		✓	✓	✓		✓			✓
		Digital Controllers		✓	✓	✓		✓	✓	✓			✓	✓	✓		✓	✓	
		Elective Subject				✓	✓		✓		✓	✓			✓	✓		✓	✓
		Summer Training			✓	✓		✓	✓	✓	✓			✓	✓	✓	✓		✓
Fourth Year – Computer Electronics Branch		Intelligent Systems Modelling		✓		✓	✓	✓	✓			✓		✓			✓		✓
		Advanced Computer Technology			✓	✓		✓	✓	✓	✓			✓	✓	✓	✓		✓
		Computer Interfacing Circuit Design		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	
		Advanced Digital Electronics		✓	✓	✓			✓	✓	✓		✓	✓	✓	✓	✓		✓
		Project Management			✓		✓			✓	✓	✓		✓	✓	✓	✓	✓	
		Computer Networks		✓		✓	✓	✓	✓			✓		✓			✓		✓

Year / Level	Course Code	Course Name	Core or Elective	Knowledge objectives				Program-specific skill objectives				Affective and value objectives				General and transferable skills (employability and personal development)			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4	D1	D2	D3	D4
		Elective Subject		✓		✓			✓	✓		✓	✓	✓		✓			✓
		Graduation Project		✓	✓	✓		✓	✓	✓			✓	✓	✓		✓	✓	
				✓	✓	✓		✓	✓	✓			✓	✓	✓		✓	✓	
Third Year – Computer Communication Networks Branch		Computer Network Simulators				✓	✓		✓		✓	✓			✓	✓		✓	✓
		Engineering Analysis			✓	✓		✓	✓	✓	✓			✓	✓	✓	✓		✓
		Fundamentals of Control Engineering		✓		✓			✓	✓		✓	✓	✓		✓			✓
		Fundamentals of Computer Networks		✓	✓	✓		✓	✓	✓			✓	✓	✓		✓	✓	
		Real-Time Systems Design				✓	✓		✓		✓	✓			✓	✓		✓	✓
		Digital Signal Processing			✓	✓		✓	✓	✓	✓			✓	✓	✓	✓		✓
		Digital Communications		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	
		Elective Subject		✓	✓	✓			✓	✓	✓		✓	✓	✓	✓	✓		✓
		Summer Training			✓		✓			✓	✓	✓		✓	✓	✓	✓	✓	
		English Language		✓	✓	✓		✓	✓	✓									
Fourth Year – Computer Communication Networks Branch		Computer Network Protocols		✓		✓	✓	✓	✓			✓		✓			✓		✓
		Information Theory and Coding			✓	✓		✓	✓	✓	✓			✓	✓	✓	✓		✓
		Mobile Communication Systems		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	
		Computer and Network Security		✓		✓	✓	✓	✓			✓		✓			✓		✓
		Project Management			✓	✓		✓	✓	✓	✓			✓	✓	✓	✓		✓
		Multimedia Computing		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	
		Elective Subject		✓	✓	✓			✓	✓	✓		✓	✓	✓	✓	✓		✓
		Graduation Project			✓		✓				✓	✓	✓		✓	✓	✓		
		English Language		✓	✓	✓		✓		✓			✓	✓	✓		✓	✓	