Imam Alkadhum College

كلية الامام الكاظم (ع)

First Cycle – Bachelor's degree (B.Sc.) – Computer Engineering Techniques/communications and networks branch

بكالوريوس هندسة تقنيات الحاسوب-فرع الاتصالات والشبكات

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1.   Mission & Vision Statement

Vision Statement

department inputs are graduates of middle school in its scientific branch, as well as graduates of vocational education in the fields of computers, electronics, and information technology. The duration of the study is four years, after which the graduate obtains a bachelor's degree that qualifies him to practice work Technical engineering, especially in the field of designing and implementing computer-based systems in their work.

The Computer Technique Engineering Program is an applied academic program concerned with teaching and practically training students in specialized subjects and auxiliary materials for specialization in Computer Technologies Engineering.

The general specialization of the department is divided into two specialized branches, according to the student's desire, and after the student's success, to the third academic stage, which are (computer communications networks branch) and (computer electronics branch). The department's courses include general engineering requirements in computer and electronics, as well as specialization requirements such as computer networks and communications,

After completing the study program, he obtains a Bachelor's degree in Computer Engineering, and the graduate is accredited by the Iraqi Engineers Syndicate. The graduate can obtain a master's and doctoral degrees in the fields of computer technology engineering in all its specializations.

To provide academic environment for the development of skilled professionals empowered with knowledge, skills, values, and confidence to take a leadership role in the field of Computer Engineering, communication and networks.

To cultivate research culture resulting in knowledge and innovative technologies that contributes to sustainable development of the society. In addition, to enhance academic collaborations for global exposure.

2. Program Specification

Program code:	B.Sc. CET	ECTS	240
Duration:	4 levels, 8 Semesters	Method of Attendance:	Full Time

The study in the Department of Computer Technology Engineering is a multi-levels study. Where the student need to know the subjects related to his general specialization, as well as subjects related to the exact specialization, as the student is currently studying two stages of computer technology engineering subjects, then specializes in the third and fourth stages in the specialization of communications and networks, which requires the student to study various related articles:

Where in the first level, the student learns the basics of subjects such as electrical engineering, logical circuits, programming and mathematics, in addition to engineering workshops and engineering drawing.

In the second level: the student begins to learn the details of computer installation, architecture, communication basics, in addition to the necessary programming languages.

In the third level, digital communications, basic and advanced networks, real-time systems, digital signal processing and other subjects that enrich the student with basic information about communications and networks are studied.

For the fourth level, where the student is in the graduation stage. The subjects allocated to him will be related to communications, fiber optics, mobile communications, as well as project management, and certainly, the graduation project, which employs what the student, learned during his study period and shows the extent to which the student understands the concepts of specialized matters, as well as his technical capabilities.

In the third and fourth levels, the student has the right to choose a course in each semester from modern materials that are appropriate to the student's specialization and are appropriate to the requirements of the labor market.

The program is fully supported by practical materials and almost all subjects except those of a theoretical nature, as well as hours of discussion, textbooks and reports to ensure that the material is fully absorbed by the student.

The student is also required to do summer training for a period of four weeks to refine his scientific knowledge and get closer to the work environment.

3.   Program Objectives

1- Design and implement computer-based systems.
2- Dealing with electronic systems and computer control systems, in addition to communications and computer networks.
3- Familiarity with the design, installation and management of computer networks and networking devices.
4- Familiarity with low-level languages that deal with the hardware components of the computer in addition to high-level languages for help the student to implement different projects.
5- Give the student basics and technical knowledge in designing and implementation of different systems.

4.   Student Learning Outcomes

Studying the Computer Technology Engineering Department qualifies the graduate student to obtain different knowledge at different levels, according to his general and specific specialization.

The department offer to the graduate is a bachelor's degree in computer technology engineering, with a specialization in communications and networks. Where the graduate obtains the basics of the subjects, then the rest of the different levels, leading to the goal of the educational program of the department. The study in the department focuses on the practical side to increase the technical capabilities of the graduate in line with the requirements of the labor market.

Where the outcomes of the educational program of the department can be summarized as follows:

Outcome1

Electronic and electrical fundamentals

The graduate should have an understanding of the principles of electrical engineering and its details, which have an impact on his comprehension of the rest of the study materials related to it.

Outcome 2

Digital basics

The student should be familiar with the logical design and logical circuits, which are a starting point for electronic materials and digital control that the student studies in detail.

Outcome 3

Computer technology understanding

The graduate should be familiar with the installation and architecture of the computer, and how the microprocessor works. In addition to advanced computer technology.

Outcome 4

Communication technology skills

The student should be fully aware of the basics of analogue, digital and mobile communications, as well as fiber-optic communications.

Outcome 5

Important modern knowledge

The graduate should have knowledge of data security and cyber security

Outcome 6

N*etworks technique covering*

The graduate should have full knowledge of the basics and advanced networks and their protocols.

Outcome7

Programming ability

The graduate should have a good programming ability at least in three modern programming languages in addition to the calculator language.

Outcome 8

Laboratory and practical studied

The graduate should have good practical and technical capabilities that qualify him to work in various fields.

Outcome 9

Analysis and solve problem

The graduate should have the ability to design and implement projects related to his specialization. Able to handle work requirements.

Outcome 10

Keep up with scientific development

The graduate should have knowledge of modern computer science.

Outcome 11

Engineering mathematics skills

The graduate have the ability to use mathematic in correct and accurate manner to solve any problem

5. Academic Staff

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6.   Credits, Grading and GPA

Credits

(Computer Engineering Techniques Department In Imam Alkadhum College) is following the Bologna Process with the European Credit Transfer System (ECTS) credit system. The total degree program number of ECTS is 240, 30 ECTS per semester. 1 ECTS is equivalent to 25 hrs student workload, including structured and unstructured workload.

Grading

Before the evaluation, the results are divided into two subgroups: pass and fail. Therefore, the results are independent of the students who failed a course. The grading system is defined as follows:

GRADING SCHEME مخطط الدرجات				
Group	**Grade**	**التقدير**	**Marks (%)**	**Definition**
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	FX – Fail	راسب - قيد المعالجة	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note:				

Number Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Calculation of the Cumulative Grade Point Average (CGPA)

1. The CGPA is calculated by the summation of each module score multiplied by its ECTS, all are divided by the program total ECTS.

   CGPA of a 4-year B.Sc. degree:

   CGPA = [(1st ^{module} score x ECTS) + (2nd ^{module} score x ECTS) + ……] / 240

7.   Curriculum/Modules

Semester 1 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CET1101	English language 1	48	27	3.00	S	
CET1102	Mathematics 1	63	61	5.00	C	
CET1103	Computer Programming 1	64	61	5.00	B	
CET1104	Electrical Engineering Fundamentals	79	71	6.00	C	
CET1105	Logic Design	79	71	6.00	C	
CET1106	AutoCAD	77	48	5.00	B	

Semester 2 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CET1201	Democracy and Human rights	48	52	4.00	S	
CET1202	Computer Programming 2	64	61	5.00	B	CET1103
CET1203	Electrical Circuits	64	61	5.00	C	CET1104
CET1204	Logic Circuits	79	71	6.00	C	CET1105
CET1205	Mathematics 2	63	62	5.00	C	CET1102
CET1206	Engineering Workshops	77	48	5.00	C	

Semester 3 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CET2101	Mathematical Engineering	78	72	6.00	C	CET1205
CET2102	Matlab	64	61	5.00	B	
CET2103	Communications Fundamentals	64	61	5.00	C	
CET2104	Electronics Fundamentals	64	61	5.00	C	
CET2105	English language 2	48	27	3.00	S	
CET2106	Computer Organization and Architecture	79	71	6.00	C	

Semester 4 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CET2201	instruments and Measurement	79	46	5.00	C	
CET2202	Object Oriented Programming	79	71	6.00	B	CET1202
CET2203	Analog Communications	64	61	5.00	C	CET2103
CET2204	Career Ethics	48	27	3.00	S	
CET2205	Microprocessors	79	71	6.00	C	
CET2206	Electronic Circuits	64	61	5.00	C	

Semester 5 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CET3101	Digital Communications	78	72	6.00	C	CET2103
CET3102	Control Engineering	64	61	5.00	C	
CET3103	Engineering Analysis	64	61	5.00	C	
CET3104	English language 3	64	61	5.00	S	
CET3105	Computer Networks Fundamentals	48	27	3.00	C	
CET3106	Optional Subject	79	71	6.00	E	

Semester 6 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CET32O1	Digital Signal Analysis	64	61	5.00	C	
CET3202	Advance Control	79	46	5.00	C	
CET3203	Operating systems	64	61	5.00	B	
CET3204	Advanced Computer Networks	79	46	5.00	C	CET3105
CET3205	Real Time Systems	64	61	5.00	C	
CET3206	Optional Subject	64	61	5.00	E	

Semester 7 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CET4101	Data and Information Security	79	71	6.00	C	
CET4102	English Language 4	48	27	3.00	S	
CET4103	Fiber Optics Communications	79	71	6.00	C	
CET4104	Projects Management	64	61	5.00	B	
CET4105	Internet of Things	64	61	5.00	c	
CET4106	Optional Subject	64	61	5.00	E	

Semester 8 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CET4201	Coding and Information Theory	64	61	5.00	C	
CET4202	Mobile Communications	79	46	5.00	C	CET3101
CET4203	Project	64	61	5.00	C	
CET4204	Networks protocols	64	61	5.00	C	CET3105
CET4205	Cyber Security	64	61	5.00	B	CET4101
CET4206	Optional Subject	64	61	5.00	E	

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