Al Furat Al Awast Technical University

جامعة الفرات الاوسط التقنية

First Cycle – Bachelor's degree (B.Sc.) – Communication Technical Engineering

بكالوريوس هندسة تقنيات الاتصالات

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1. Mission & Vision Statement

Vision Statement

The Program Educational Objectives of the Bachelor Technical in Communication Engineering program are to:

• Provide Communication engineering professionals with the technical knowledge and skills required by the industry to develop, design, and maintain communication systems to highest level of industry standards.

• Prepare graduates for a successful career as effective decision makers with strong communication and teamwork skills and an understanding of the global,

• ethical and social implications of the industry and Communication Engineering profession.

• Provide graduates with strong commitment to lifelong learning, continuing education, and professional growth.

• provide graduates with leadership qualities and commitment to contribute actively to achieving the vision Reconstruction of Iraq.

Mission Statement

The communication Techniques Engineering (CMTE) program provides highly qualified Communication Engineers with state-of-the-art knowledge, and technical and leadership skills. The program also teaches them to embrace innovation and discovery, strive for lifelong learning, and constantly seek professional development to serve the Communication Engineering profession best.

2. Program Specification

Programmed code:	BSc-ENGTECH	**ECTS**	240
Duration:	4 levels, 8 Semesters	**Method of Attendance:**	Full Time

Communication Technical Engineering is a wide-ranging science. The program's emphasis is the whole communication and every science is related. The core subjects like electric and electronic circuits, analog and digital communication, etc., remain the same in all communication departments in the other colleges. As well as, the curriculum consists of group projects, practical, workshops, internships, and industrial visits. The students also need to form groups and prepare a final-year project that offers solutions to different operations related to communication sciences. This allows students to develop their wide-ranging interests in communication.

Level 1 exposes students to the fundamentals of electricity and electronics, suitable for progression to all programs within the communication program group. Program-specific core topics are covered at Levels 2, 3, and 4, ensuring the breadth of knowledge expected of a technical engineering degree graduate.

The research ethos is developed and fostered from the start via practical, which are either embedded in lecture modules or taught in dedicated practical modules, research seminars, and tutorials. There is a compulsory field course in Level 1, which students must pass to progress into Level 2, and optional field courses in Levels 2, 3, and 4. At Level 4, all students carry out an independent research project, which may be a credit library or data analysis project or a credit field or laboratory-based project.

3. Program Objectives

Program Educational Objectives of the Bachelor Technical in Communication Engineering program are to:

• Provide Communication engineering professionals with the technical knowledge and skills required by the industry to develop, design, and maintain communication systems to highest level of industry standards.

• Prepare graduates for a successful career as effective decision makers with strong communication and teamwork skills and an understanding of the global,

• ethical and social implications of the industry and Communication Engineering profession.

• Provide graduates with strong commitment to lifelong learning, continuing education, and professional growth.

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4. Student Learning Outcomes

Upon graduation, an ETCN graduate in Bachelor Technical of Communication Engineering:

Outcome 1

An ability to select and apply the knowledge, techniques, skills, and modern tools of communication engineering to broadly defined engineering technology activities.

Outcome 2

An ability to select and apply a knowledge of mathematics, science, engineering, and technology to communication engineering techniques problems that require the application of principles and applied procedures or methodologies.

Outcome 3

An ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes.

Outcome 4

An ability to design systems, components, or processes for broadly defined communication engineering techniques and problems appropriate to program educational objectives.

Outcome 5

An ability to function effectively as a member or leader on the technical team.

Outcome 6

An ability to identify, analyze, and solve broadly defined communication engineering techniques problems.

Outcome 7

An ability to apply written, oral, and graphical communication in both technical and non-technical environments; and an ability to identify and use appropriate technical literature.

Outcome 8

An understanding of the need for and an ability to engage in self-directed continuing professional development.

Outcome 9

An understanding of and a commitment to address professional and ethical responsibilities including respect for diversity.

Outcome 10

A knowledge of the impact of engineering techniques solutions in a societal and global context.

Outcome 11

A commitment to quality, timeliness, and continuous improvement.

Outcome 12

Critical Thinking Graduates will be able to use critical thinking and problem-solving skills to develop a research project and/or paper.

5. Academic Staff

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6. Credits, Grading and GPA

Credits

Alfurat Al-Awsat technical University (ATU) 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-reques
ATUU113	English 1	18	32	2	S	no
ATU1111	(Computer)	48	27	3	B	no
ATU11103	Calculus 1	63	62	5	B	no
ATU11104	DC Electrical Circuits	93	82	7	C	no
ATU11105	physics and semi-conductor	93	82	7	C	no
ATU11107	Engineering Drawing	63	37	4	B	No
ATU11	Human Rights and Democracy	33	17	2	S	No

Semester 2 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-reques
ATUU112	Arabic language	18	32	2.00	S	no
ATU11208	Calculus 2	63	62	5.00	B	no
ATU11209	AC Electrical Circuits	78	72	6.00	C	no
ATU11210	Digital Logic	93	82	7.00	C	no
ATU11211	Electronic Circuits	93	82	7.00	C	no
ATU11212	Engineering Workshops	48	27	3.00	B	No

Semester 3 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-reques
ATU11301	Electronic Circuits Design	78	72	6.00	C	no
ATU11302	SIGNALS AND SYATEMS	78	72	6.00	C	no
ATU11303	Electromagnetic static Fields	48	52	4.00	C	no
ATU11304	Mathematical modeling system	63	62	5.00	B	no
ATU11305	Digital Circuits Design	78	72	6.00	C	no
ATU11306	Visaul Basic	48	27	3.00	B	no

Semester 4 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
ATU222	Computer2	48	27	3.00	B	no
ATU11408	Differential Equations	63	112	7.00	B	no
ATUU211	Baath Party Crimes	18	32	2.00	S	no
ATU11410	ANALOG COMMUNICATIONS	78	97	7.00	C	no
ATU11411	Integrated Electronic Circuits	78	97	7.00	C	no
ATU221	English 2	18	32	2.00	S	no
ATU220	Arabic language	18	32	2.00	S	no

Semester 5 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-reques
ATU11501	ENGINEERING ANALYSIS	63	62	5	B	no
ATU11502	probability and Statistics	48	52	4	B	No
ATU11503	Antenna and Wave Propagation	78	72	6	C	no
ATU11504	DIGITAL COMMUNICATION	63	87	6	C	no
ATU11505	Microprocessor	93	57	6	C	no
ATU11506	Matlab Programming	63	12	3	B	No

Semester 6 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-reques
ATU11607	NUMERICAL ANALYSIS	48	52	4	B	no
ATU11608	Information Theory	48	77	5	C	no
ATU11609	DIGITAL SIGNAL PROCESSING	48	102	6	C	no
ATU11610	Optical Fiber	63	87	6	C	no
ATU11611	Microcontroller	78	72	6	C	no
ATU11612	Python Language Programing	63	12	3	B	no

Semester 7 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-reques
ATU11701	Computer Networks	93	82	7	C	no
ATU11702	Wireless Communications	48	52	4	C	no
ATU11703	Optical Communication	63	87	6	C	no
ATU11704	Control	93	82	7	B	no
ATU11705	Projects Management	63	37	4	B	no
ATU11706	Professional Ethics	33	17	2	S	no

Semester 8 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-reques
ATU11807	Artificial Intelligence	63	87	6	C	no
ATU11808	Satalite Communication	33	67	4	C	no
ATU11809	Cyber Security	48	52	4	C	no
ATU11810	Mobile Communications	63	87	6	C	no
ATU11811	Communication Devices Maintenance	93	57	6	C	No
ATU11812	Final Project	63	37	4	C	No

8. Contact

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