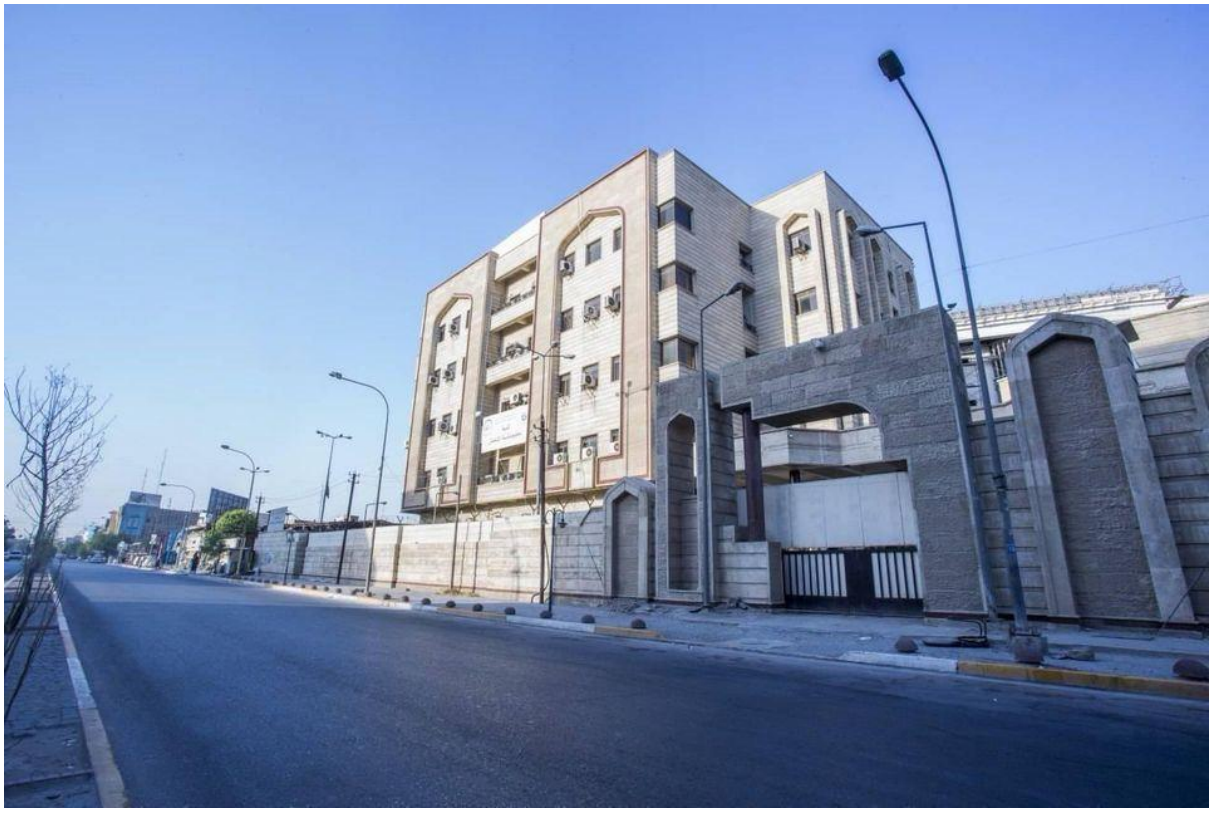
University of Information Technology and Communications
جامعة تكنلوجيا المعلومات والاتصالات

Seventh Cycle – Bachelor's Degree (B.Sc.)
- Mobile Communications and Computing Engineering

بكالوريوس - هندسة اتصالات والحوسبة المتنقلة



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1. Department Overview

The Department of Communications and Mobile Computing Engineering was established in 2017 to keep pace with rapid technological advancements and the increasing demand for engineers capable of integrating communication technologies with mobile computing systems. The department provides a curriculum aligned with international academic standards and focuses on both theoretical and practical aspects of communication and mobile computing technologies.

2. Vision

The Department of Communications and Mobile Computing Engineering aspires to be a global leader in the field of communication and mobile computing engineering, distinguished by innovation, technical excellence, and social responsibility, within an educational environment that fosters creativity, collaboration, and scientific integrity.

3. Objectives

• Provide a comprehensive academic curriculum that covers communications, mobile devices, cloud computing, information security, and data analysis.

• Promote innovation and entrepreneurship through collaboration with industry partners.

• Foster a culture of creativity and excellence.

• Prepare graduates with globally competitive skills through training programs and international collaboration.

• Raise public awareness of the importance of mobile computing through outreach initiatives and community service projects.

• Contribute to knowledge advancement through scientific publications and patent production.

4. Learning outcome

By the end of the program, graduates will be able to:

1. Design and implement wired and wireless communication networks using modern digital technologies.
2. Analyze digital signals and apply digital signal processing techniques to improve communication quality.
3. Operate and maintain embedded systems and precise processors used in smart devices.
4. Develop mobile applications and Internet of Things (IoT) systems for various sectors.
5. Build and manage computer systems and protect them against cybersecurity threats.
6. Utilize cloud computing and data analysis techniques in advanced communication applications.
7. Apply the principles of artificial intelligence and machine learning to mobile computing solutions.
8. Demonstrate commitment to engineering ethics, technical standards, and the execution of projects and professional tasks.

5. Graduate title

The graduate of the department holds the title **“Communications Engineer specialized in Communications and Mobile Computing”.**

The graduate is eligible to be appointed in official positions under the title **“Assistant Engineer”**, and will be classified within the professional engineering ladder as follows:

Assistant Engineer → Engineer → Senior Engineer → Assistant Chief Engineer → Chief Engineer → Senior Chief Engineer.

6. Study System in Department

The department follows the semester-based system for a duration of four academic years (8 semesters).

• The total credit hours required: 240 ECTS.

• The study program aligns with the Bologna Process for quality assurance and global academic compatibility.

• The program includes morning classes (evening classes are offered in special cases)

7. Program Specification

The department follows the semester-based system for a duration of four academic years (8 semesters).

• The total credit hours required: 240 ECTS.

• The study program aligns with the Bologna Process for quality assurance and global academic compatibility.

• The program includes morning classes (evening classes are offered in special cases)

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

The Mobile Communication and Computing Engineering Department offers a comprehensive curriculum for students interested in the field of mobile communication and computing engineering. The department is structured to provide students with a strong foundation in both theoretical and practical aspects of the field.

The curriculum is designed to span over eight semesters, with each semester building on the knowledge and skills acquired in the previous semester. In the first semester, students are introduced to the preliminary fundamentals of engineering and science, including engineering drawing, mathematics, electrical circuits, electronics physics and logic circuits.

In the second semester, students delve deeper into above fields and includes as well computer programming, mathematics for computing, human rights and democracy. The third semester focuses on advanced mathematics, electronic circuits, computer programming, electromagnetics, mobile computing and statistics.

The fourth semester is dedicated to digital electronics, communication fundamentals, microprocessors, engineering ethics and related useful mathematical equations for the

department fields. In the fifth semester, students study essential topics in mobile communication and computing engineering, including computer networks, linear algebra, web design, digital communications, and antennas and wave of propagation.

The sixth semester is an advanced version of fifth semester with summer internship. This provides students with an opportunity to apply the knowledge and skills acquired in the previous semesters in a real-world setting. Topics include numerical analysis, digital signal processing, computer networks, information theory and coding, space science, wireless communication networks.

In the seventh semester, students study embedded systems, mobile applications, mobile communications, network security, project management, and graduation project which are increasingly becoming important in the field of mobile communication and computing engineering along with graduation project. The final semester is a complementary of seventh semester along with optical fibers, internet of things, mobile applications development and cloud computing. The students are expected to demonstrate their mastery of the field by conducting graduation project for developing innovative solutions to real-world problems.

Overall, the Mobile Communication and Computing Engineering Department in Bologna offers a rigorous and comprehensive curriculum that prepares students for a career in this dynamic and rapidly evolving field. Graduates of this program are well-equipped to take on challenging roles in industries such as telecommunications, software development, and information technology.

8. Employment Opportunities for Graduates

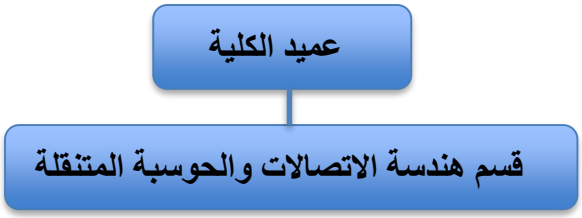
Public Sector:

- Government ministries (such as the Ministry of Communications, Ministry of Interior, Ministry of Defense, Ministry of Education, and Ministry of Industry).
- The Media and Communications Commission.
- Technical departments and institutions that require telecommunications engineers.

Private Sector:

- Mobile communications and internet service providers.
- Companies specializing in mobile applications development and mobile technology.
- Technology firms and smart city solutions providers.
- Software development companies and artificial intelligence enterprises.

9. Organizational Structure



إحصائية بالأكادر التدريسي

التصنيف الوظيفي	اللقب العلمي	دكتوراه			ماجستير			بكالوريوس			المجموع الكلي
		انثى	ذكر	مجموع	انثى	ذكر	مجموع	انثى	ذكر	مجموع	
التدريسي	أستاذ مساعد	_	٣	٣	_	_	_	_	_	_	٣
	مدرس	٦	٤	١٠	٢	٢	٤	_	_	_	١٤
	مدرس مساعد	_	١	١	١٤	١٠	٢٤	_	_	_	٢٥
فني	_	_	_	_	_	_	_	٦	_	٦	٦
	المجموع	٦	٨	١٤	١٦	١٢	٢٨	٦	_	٦	٤٨

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11. Credits, Grading and GPA

Credits

University of Information Technology and Communications 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 ^{m}odule score x ECTS) + (2nd ^{m}odule score x ECTS) + ……] / 240

12. Curriculum/Modules

Semester 1 | 30 ECTS | 1 ECTS = 25 hrs

Module Code	Module Name in English	SSWL	USSWL	SWL	ECTS	Module Type	Prerequisite Module(s) Code
		hr/sem	hr/sem	hr/sem			
ITC220011	Mathematics I	48	102	150	6.00	B	
ITC000021	Computer I	47	28	75	3.00	B	
ITC2٠0031	Electrical Circuits I	78	72	150	6.00	C	
ITC200040	Engineering Drawing	48	27	75	3.00	B	
ITC2200٣٠	Engineering Ethics	63	62	125	5.00	C	
ITC220010	Electronics Physics	48	77	125	5.00	B	
ITC000031	English Language I	32	18	50	2.00	B	
		364	386	750	30.00		

Semester 2 | 30 ECTS | 1 ECTS = 25 hrs

Module Code	Module Name in English	SSWL	USSWL	SWL	ECTS	Module Type	Prerequisite Module(s) Code
		hr/sem	hr/sem	hr/sem			
ITC2٠0012	Mathematics II	48	102	150	6.00	C	ITC220011
ITC2٠002٠	Digital Systems Design	78	72	150	6.00	C	
ITC2٠0032	Electrical Circuits II	63	87	150	6.00	C	ITC220031
ITC000041	Arabic Language	33	17	50	2.00	B	
ITC2200٢٠	Mathematic for Computing	48	27	75	3.00	E	ITC220011
ITC000000	Democracy and Human Rights	32	18	50	2.00	B	
ITC200٠٥٠	Computer Programming I	78	47	125	5.00		
		380	370	750	30.00		

Semester 3 | 30 ECTS | 1 ECTS = 25 hrs

Module Code	Module Name in English	SSWL	USSWL	SWL	ECTS	Module Type	Prerequisite Module(s) Code
		hr/sem	hr/sem	hr/sem			
ITC000010	AL-Baath Regime Crimes in Iraq	32	18	50	2.00	B	
ITC200070	Electronics	78	72	150	6.00	C	ITC200032
ITC200061	Engineering Mathematics I	48	77	125	5.00	B	ITC200012
ITC200080	Statistics and Probability	48	27	75	3.00	B	ITC200012
ITC220040	Web Design	78	47	125	5.00	E	ITC200050
ITC220050	Electromagnetic Fields	33	67	100	4.00	C	ITC200012
ITC2201٠١	Computer Networks I	63	62	125	5.00	C	
		380	370	750	30		

Semester 4 | 30 ECTS | 1 ECTS = 25 hrs

Module Code	Module Name in English	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
ITC000042	Arabic Language II	32	18	50	2.00	B	ITC000041
ITC000022	Computer II	47	28	75	3.00	B	ITC000021
ITC٠٠٠٠٣٢	English Language II	٣٢	١٨	٥٠	٢,٠٠	B	ITC000031
ITC200062	Engineering Mathematics II	48	102	150	6.00	B	ITC200061
ITC200100	Linear Algebra	48	52	100	4.00	B	ITC200012
ITC220070	Communications Fundamentals	78	97	175	7.00	C	ITC200061 + ITC200070
ITC200090	Digital Electronics	78	72	150	6.00	C	ITC200070
		394	356	750	30.00		

Semester 5 | 30 ECTS | 1 ECTS = 25 hrs

Module Code	Module Name in English	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
ITC200110	Numerical Analysis	48	52	100	4.00	B	ITC200100
ITC200121	Space Science I	48	52	100	4.00	E	
ITC220090	Antenna and Wave Propagation	78	97	175	7.00	C	ITC220070 + ITC220050
ITC220102	Computer Networks II	63	62	125	5.00	C	ITC220101
ITC210110	Digital Communications	78	72	150	6.00	C	ITC220070 + ITC220050
ITC220120	Project Management	63	37	100	4.00	S	
		378	372	750	30.00		

Semester 6 | 30 ECTS | 1 ECTS = 25 hrs

Module Code	Module Name in English	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
ITC200122	Space Science II	48	52	100	3.00	E	ITC200121
ITC220140	Digital Signal Processing	33	67	100	3.00	C	ITC200062
ITC220201	Mobile Applications Development I	63	87	150	6.00	C	ITC220040
ITC220080	Microprocessors	63	62	125	3.00	C	ITC200020
ITC220150	Information Theory and Coding	63	87	150	6.00	C	ITC200080 + ITC220110
ITC220170	Embedded Systems	78	47	125	6.00	E	ITC200090 + ITC200050
		395	354	750	30.00		

Semester 7 | 30 ECTS | 1 ECTS = 25 hrs

Module Code	Module Name in English	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
ITC200131	Graduation Project I	48	52	100	4.00	C	
ITC220160	Artificial Intelligence	63	62	125	5.00	E	ITC200080 + ITC200050
ITC220210	Mobile Communication	63	87	150	6.00	C	ITC220150 + ITC220140
ITC220190	Network Security	63	37	100	4.00	E	ITC220102
ITC220202	Mobile Applications Development II	63	62	125	5.00	C	ITC220201
ITC220180	Satellite Communications	78	72	150	6.00	C	ITC220110
		393	357	750	30.00		

Semester 8 | 30 ECTS | 1 ECTS = 25 hrs

Module Code	Module Name in English	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
ITC200132	Graduation Project II	48	52	100	4.00	C	ITC200131
ITC220230	Internet of Things	63	62	125	5.00	E	ITC220170 + ITC220102
ITC220220	Optical Fiber Communications	63	62	125	5.00	C	ITC220090
ITC220060	Mobile Computing	63	62	125	5.00	C	ITC220190 + ITC220202
ITC220130	Soft Computing	63	62	125	5.00	E	ITC220160
ITC220240	Wireless Communication Networks	78	72	150	6.00	C	ITC220140 + ITC220150
		363	387	750	30.00		

13. Committee Members

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