

**Ministry of Higher Education and Scientific Research
Scientific supervision and evaluation
Department of Quality Assurance and Academic Accreditation**

Form of academic program description for colleges and institutes

University: University of Information and Communication Technology

College / Institute: Faculty of Engineering

Department of Mobile Communications and Computing Engineering

Date of file filling: / /2018

Signature:

Head of Department: Dr. Jafar

Date:

Signature:

Scientific Assistant Name:

Date:

Probe file by :

Division of Quality Assurance and University Performance:

Name of the Director of the Division of Quality Assurance and University Performance:

History:

Signature:

The approval of the Dean

Description of the academic program

The description of this academic program provides a brief summary of the main characteristics of the program and of the expected learning outcomes of the student to demonstrate whether he has made the best use of the opportunities available. It is accompanied by a description of each course within the program

1. Educational institution	University of Information and Communication Technology
2. Scientific Section / Center	Mobile Communication and Computing engineering
3. Name of academic or vocational program	Bachelor of Engineering
4. Name of final certificate	BS in Mobile Communication and Computing Engineering
5. Study system: Year / Courses / Other	quarterly
6. Accredited accreditation program	ABET
Other external influences	NOTHING
Date of description setting	
7. Vision, message, and goals	
<ul style="list-style-type: none"> The long-term future of digital communications lies in the use of mobile devices, rather than fixed ones. Over the past few years, developers and consumers have seen an increase in mobile communications with a focus on mobile software and devices and, most importantly, quality of service and performance for cost. In this engineering section, we look forward to demonstrating the most important developments in the field of mobile communications and computing within a wider context and keeping abreast of the rapid development of the digital communications industry. Through the program, which is prepared according to strict scientific standards, the students will gain the theoretical and practical competence in mobile technology, so that they can design and develop the operational and practical software and the appropriate devices, in addition to acquiring professional skills in the planning of mobile 	

and wireless systems. The high and long-term employment of their specialized expertise is rare.

Vision:

Our vision is that the Mobile Communications and Computing Engineering Department will be in the near future of the leading and leading engineering departments locally, regionally and globally by providing a high quality educational system.

The message:

The graduation of skilled and innovative engineering cadres required in the labor market have self-motivation and ethical professional values that enable them to research and develop and keep up with the technology of the age in order to serve the community.

Objectives:

The objectives of the department are to focus on three main axes: knowledge, skills and behavior.

1 - Work to have the graduate student skills and knowledge required to design, operate and examine the mobile communication systems and be able to solve emerging problems.

2 - The graduate student is able to adapt to different working environments and dealing with them through communication skills and the ability to work affirmative in multidisciplinary teams or independently during the implementation of complex tasks.

3 - The student should be able to integrate academic knowledge with field practice in order to develop the engineering profession within the field of specialization within the framework of social values and professional ethics.

4 - The student should be able to continue to develop his knowledge and skills for life and take advantage of every new in the field of competence.

8. Required program outputs and methods of teaching, learning and evaluation

(A) Knowledge and understanding

1. The ability to apply knowledge in the fields of mathematics and engineering specialized sciences in the field of communication and mobile computing.
2. Ability to solve problems by designing appropriate algorithms.
3. Develop skills and abilities through the proper procedures and contexts.
4. Preparing the student to continue self-learning and the collection of new techniques and skills in engineering fields.

(B) Special skills

1. Ability to apply appropriate mobile computing knowledge necessary to program outputs and specialization.
2. Ability to analyze problems and identify and define the engineering requirements required for solution.
3. Ability to design, implement and evaluate mobile phone systems and software necessary for implementation.
4. Ability to analyze and influence computing on the performance of individuals, groups, institutions and society in general.

Teaching and learning methods

- Studying the theoretical and practical academic program for specialized courses.
- The theoretical program is taught using the white data display or the digital display (Data Show) connected to the PC, while discussing the ideas and the scientific vocabulary with the students.
- The practical program of the specialized courses are conducted laboratory or field experiments and the collection of measurements by small groups of students and analysis of measurements and discussion and presentation.

Evaluation methods

- Preparation of classroom and homework assignments.
- Reporting on practical experiences.
- Reporting on small projects and presenting them to students.
- Daily and monthly examinations.
- final exams.

(C) Thinking skills

1- The ability to choose the appropriate methods in analyzing and accomplishing the activities in the field of communications engineering and mobile computing.

2 - Develop good ideas for projects and designs and audit.

3- Ability to give correct and scientific solutions to various problems.

Teaching and learning methods

- Adopting international scientific methods in the preparation of theoretical and scientific curricula.
- Adoption of the diversity of knowledge in the preparation of curriculum vocabulary to include real issues and problems that stimulate students to express their views and solutions proposed and choose the best way to address problems and challenges.

Evaluation methods

- Adopting test questions of a varied nature to include various evaluation issues and finding solutions to the challenges that enable the student to choose the best solution.
 - Preparation of reports and studies on real problems and how to benefit from solutions and global experiences.
- Organizing visits to various institutions and centers for the purpose of reading and benefiting from the ideas and practical experiences.

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

1. Ability to work effectively within a team to accomplish a specific task.
2. Understand what is related to the professional specialization of ethics, laws, safety procedures and social belongings.
3. Ability to present, discuss and defend ideas in the correct administrative and scientific manner.
4. Ability to communicate effectively with a group of listeners.
5. Ability to actively participate and plan projects.
6. Ability to master other languages at the level that ensures and achieves the development of work and improve its quality.

Teaching and learning methods

- Participate in the preparatory courses of knowledge about management and how to work in accordance with official contexts.
- Students practice to work through a group of students during the practical program of lessons.
- Encouraging students to participate in seminars and workshops to qualify them to gain the necessary experience to speak and present their ideas to the audience.

Evaluation methods

- The various activities and activities of the students through which the understanding, care and discipline of the students are inferred
- Evaluation through seminars and seminars during which the student is assessed for his moral and scientific responsibility.
- Assessment through the annual project in addition to the summer activities of the specialized courses that contribute to the assessment of the student's performance and intellectual ability in the analysis, analysis and implementation.

1.1 Structure of the program

- The first and second year in this section provides students with a strong practical and theoretical foundation in programming languages, object programming, digital and analog electronics, electrical science, basic mathematics and engineering. In addition, students will be scientifically prepared to specialize in communications engineering and mobile computing.
- In the third year, the student will be able to attend many specialized subjects in the field of advanced communications, networking and software engineering for the development of mobile applications.
- In the final year, in addition to the study of advanced specialist subjects, students will implement an important group engineering project aimed at solving the real world problem in the field of communication or computerization of mobile devices. The project includes advanced design, experience in implementation and confidence-building through the application of the skills and techniques acquired during the course of its study.
- The curriculum consists of 154 quarterly units taught by the student in (4) four years of study and two semesters per year. These modules are divided into 9 main areas of specialization in communications and mobile computing engineering, which were distributed in eight semesters sequentially with the progress of the study stages. Figures 1 and 2 below show the share of each module and its distribution within the four years.

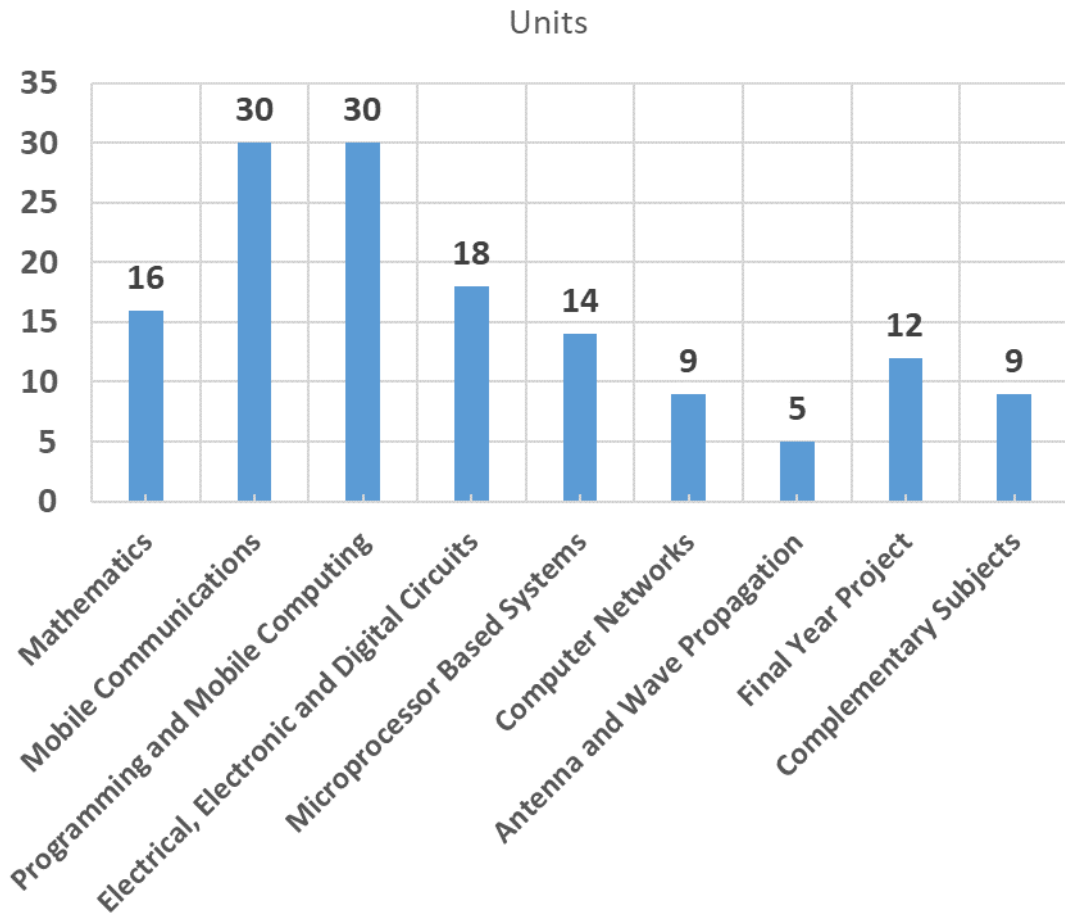


Figure 1

Year 1		Year 2		Year 3		Year 4	
1 st Sem.	2 nd Sem.	1 st Sem.	2 nd Sem.	1 st Sem.	2 nd Sem.	1 st Sem.	2 nd Sem.
Mathematics							
MAT1101	MAT1201 MAC1206	EMA2101 STP2108	EMA2201	16 Units			
Electrical, Electronic and Digital Circuits							
DSD1102 ECT1103	DSD1202 ECT1203	ELE2102	ELE2202	18 Units			
Programming and Mobile Computing							
PRL1104	PRL1204	WPR2105 OOP2106	WPR2205 OOP2206 OPS3107 MCP2208	MAD3102	MAD3202	30 Units	5SCP420
Microprocessor Based Systems							
	CMA1207	MPS2104	MPS2204	EMB3101	EMB3201	14 Units	
Communications							
30 Units		COM2103	COM2203	DCM3106 WCN3103	DSP3206 WCN3203	MCM4102 ITC3205	MCM4202 OFC4204

Computer Networks				
9 Units	CMN3107	CNP3207	CNA4104	
Antenna and Wave Propagation				
5 Units	EMF2107		AWP3204	
Final Year Project				
12 Units			PRJ4101 PMT4103	PRJ4201 PMT4203
Complementary Subjects				
11 Units	7MMS310 HCI3104	DBS3207	NWS4106	IOT4206

Figure 2

(T): theoretical (p): practical (U): Unity

The first stage
First Semester (11)

#	Subject	Subject Name	T	P	U	Code
1	Mathematics I	رياضيات ١	3	-	3	MAT1101
2	Digital Systems Design I	تصميم النظم الرقمية ١	2	3	3	DSD1102
3	Electrical Circuits Analysis I	تحليل الدوائر الكهربائية ١	2	3	3	ECA1103
4	Programming Fundamentals I	أساسيات البرمجة ١	2	2	3	PRL1104
5	English Language I	لغة انكليزية ١	2	-	2	ENL1105
6	Engineering Drawing	رسم هندسي	-	3	1	EDR1106
7	Human Rights	حقوق انسان	1	-	1	HRS1107
8	Arabic Language	لغة عربية	2	-	2	ARL1108
	Total		14	11	18	

Second Semester (12)

#	Subject	Subject Name	T	P	U	Code
1	Mathematics II	رياضيات ٢	3	-	3	MAT1201
2	Digital System Design II	تصميم النظم الرقمية ٢	2	3	3	DSD1202
3	Electrical Circuits Analysis II	تحليل الدوائر الكهربائية ٢	2	3	3	ECA1203
4	Programming Fundamentals II	أساسيات البرمجة ٢	2	2	3	PRL1204
5	English Language II	لغة انكليزية ٢	2	-	2	ENL1205
6	Mathematics for Computing	رياضيات الحوسبة	2	-	2	MAC1206
7	Computer Architecture	معمارية الحاسبة	2	-	2	CMA1207
8	Freedom and Democracy	ديمقراطية و حرية	1	-	1	ARL1208
	Total		16	8	19	

The second Stage
First Semester (21)

#	Subject	Subject name	T	P	U	Code
1	Engineering Mathematics I	رياضيات هندسية ١	3	-	3	EMA2101
2	Electronics I	اليكترونيك ١	2	3	3	ELE2102
3	Communications I	إتصالات ١	2	2	3	COM2103
4	Microprocessors I	معالجات ١	2	2	3	MPS2104
5	Web Programming I	برمجة المواقع ١	2	2	3	WPR2105
6	Object Oriented Programming I	برمجة شينية ١	2	2	3	OOP2106
7	Electromagnetic Fields	مجالات كهرومغناطيسية	2	-	2	EMF2107
8	Statistics and Probability	احتمالية و احصاء	2	-	2	STP2108
	Total		17	11	22	

First Semester (22)

#	Subject	Subject name	T	P	U	Code
1	Engineering Mathematics II	رياضيات هندسية ٢	3	-	3	EMA2201
2	Electronics II	اليكترونيك ٢	2	3	3	ELE2202
3	Communications II	إتصالات ٢	2	2	3	COM2203
4	Microprocessors II	معالجات ٢	2	2	3	MPS2204
5	Web Programming II	برمجة المواقع ٢	2	2	3	WPR2205
6	Object Oriented Programming II	برمجة شينية ٢	2	2	3	OOP2206
7	Operating Systems	انظمة التشغيل	2	-	2	OPS2207
8	Mobile Computing	حوسبة متنقلة	2	-	2	MCP2208
	Total		17	11	22	

Third Stage
First Semester (31)

#	Subject	Subject name	T	P	U	Code
1	Embedded Systems I	أنظمة مضمنة ١	2	2	3	EMB3101
2	Mobile Applications Development I	تطوير تطبيقات النقل ١	2	2	3	MAD3102
3	Wireless Communications Networks I	شبكات الاتصالات اللاسلكية ١	2	2	3	WCN3103
4	Human-Computer Interaction *	تفاعل الإنسان والحاسوب *	2	-	2	HCI3104
5	Digital Communications	اتصالات رقمية	3	3	4	DCM3105
6	Computer Networks	شبكات الحاسوب	2	2	3	CMN3106
7	Multimedia Systems	انظمة الوسائط المتعددة	2	-	2	MMS3107
	Total		15	11	20	

Second Semester (32)

#	Subject	Subject name	T	P	U	Code
1	Embedded Systems II	أنظمة مضمنة ٢	2	2	3	EMB3201
2	Mobile Applications Development II	تطوير تطبيقات النقل ٢	2	2	3	MAD3202
3	Wireless Communications Networks II	شبكات الاتصالات اللاسلكية ٢	2	2	3	WCN3203
4	Antennas and Wave Propagation	هوائيات و انتشار الموجة ٢	2	2	3	AWP3204
5	Digital Signal Processing	معالجة الإشارة الرقمية	2	-	2	DSP3205
6	Computer Networks Protocols	بروتوكولات شبكات الحاسوب	2	2	3	CNP3206
7	Database Systems	نظم قواعد البيانات	2	2	3	7DBS320
	Total		14	12	20	

The fourth stage
First Semester (41)

#	Subject	Subject name	T	P	U	Code
1	Project I	مشروع ١	1	4	3	PRJ4101
2	Mobile Communications I	اتصالات متنقلة ١	2	2	3	MCM4102
3	Project Management I	إدارة مشروع ١	2	2	3	PMT4103
4	Computer Networks Administration	إدارة شبكات الحاسوب	2	2	3	CNA4104
5	Information Theory and Coding *	نظرية المعلومات والتشفير *	3	-	3	ITC4105
6	Networks Security *	أمنية الشبكات *	2	-	2	NWS4106
	Total		12	10	17	

Second Semester (42)

#	Subject	Subject name	T	P	U	Code
1	Project II	مشروع ٢	1	4	3	PRJ4201
2	Mobile Communications II	اتصالات متنقلة ٢	2	2	3	MCM4202
3	Project Management II	إدارة مشروع ٢	2	2	3	PMT4203
4	Optical Fiber Communications *	*إتصالات الالياف الضوئية	2	2	3	OFC4204
7	Soft Computing *	حوسبة مرنة *	2	-	2	5SCP420
6	* Internet of Things	*انترنت الاشياء	2	-	2	IOT4206
	Total		11	10	16	

Optional Materials (*)

- 1- Fifth Generation Wireless Technologies.
- 2- Cloud Computing.
- 3- RF Systems and Circuit Design.
- 4- Image Processing.
- 5- Distributed Database Systems.
- 6- Telecom and Packet Networks.

Curriculum summary of the department

Details Number of items No. of units	Details Number of items No. of units	Details Number of items No. of units
154	58	Total curriculum
103	37	Total Engineering Materials
16	6	Optional materials
3105		Total number of hours for four years

12. Planning for personal development

The department's personal development plan includes the following points:

- 1 - Acquire student learning skills and self - learning through the nature of vocabulary and curriculum and methods of teaching approved.
- 2 - Qualifying students to work in a research team according to the global contexts followed.
3. Encouraging students to enter and participate in competitions, seminars and conferences, which develop and develop their research capacity and self-confidence in self-learning.

13. Acceptance Criteria (Regulations on Admission to the College)

Students are admitted to the college according to their sixth grade grade. The criteria for distributing students to the department are as follows:

- 1 - Student desire.

2 - the rate obtained in the sixth grade preparatory.

3- The department's plan for admission according to absorptive capacity

14. The most important sources of information about the program

- Methodological books.
- Assisting external sources.
- Accredited Scientific sources (International Information Network).

Curriculum Skill Chart																			
Learning outcomes required from the program																			
		Scientific and transferable skills related to employability and personal development				Thinking skills			Special skills				Knowledge and understanding				Course Name	Course Code	The year
		4 د	3 د	2 د	1 د	3 ج	2 ج	1 ج	4 ب	3 ب	2 ب	1 ب	4 أ	3 أ	2 أ	1 أ			
						✓	✓	✓					✓			✓	Mathematics I	MAT1101	1\1
			✓	✓	✓	✓		✓					✓	✓		✓	Digital Systems Design I	DSD1102	1\1
				✓	✓	✓		✓					✓	✓		✓	Electrical Circuits Analysis I	ECA1103	1\1
		✓	✓	✓		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	Programming Fundamentals I	PRL1104	1\1
		✓						✓									English Language I	ENL1105	1\1
			✓				✓			✓		✓	✓				Engineering Drawin	EDR1106	1\1

			✓	✓			✓											g		
																		Human Rights	HRS1 107	1\ 1
			✓				✓											Arabic Language	ARL1 108	1\ 1
						✓	✓	✓					✓					Mathematics II	MAT1 201	1\ 2
			✓	✓	✓	✓		✓				✓	✓					Digital System Design II	DSD1 202	1\ 2
						✓	✓	✓				✓	✓	✓				Electrical Circuits Analysis II	ECA1 203	1\ 2
			✓	✓	✓				✓	✓	✓	✓	✓	✓	✓			Programming Fundamentals II	PRL1 204	1\ 2
			✓	✓				✓										English Language II	ENL1 205	1\ 2
							✓	✓	✓			✓						Mathematics for Computing	MAC 1206	1\ 2
			✓			✓	✓	✓			✓							Computer Architecture	CMA 1207	1\ 2
						✓												Freedom and Democracy	ARL1 208	1\ 2

Curriculum Skill Chart

Learning outcomes required from the program														Course Name	Course Code	The year	
Scientific and transferable skills related to employability and personal development				Thinking skills			Special skills				Knowledge and understanding						
4 د	3 د	2 د	1 د	3 ج	2 ج	1 ج	4 ب	3 ب	2 ب	1 ب	4 أ	3 أ	2 أ	1 أ			
		✓		✓	✓	✓					✓			✓	Engineering Mathematics I	EMA2101	1\2
	✓	✓	✓	✓		✓			✓		✓	✓		✓	Electronics I	ELE2102	1\2
	✓	✓	✓	✓		✓			✓		✓	✓		✓	Communications I	COM2103	1\2
✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓		✓	Microprocessors I	MPS2104	1\2
✓		✓		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	Web Programming I	WPR2105	1\2
✓		✓	✓	✓		✓		✓	✓	✓	✓	✓	✓	✓	Object Oriented Programming I	OOP2106	1\2
					✓	✓				✓				✓	Electromagnetic Fields	EMF2107	1\2
		✓		✓	✓	✓				✓				✓	Statistics and Probability	STP2108	1\2

1\2																	
		✓		✓	✓	✓					✓			✓	Engineering Mathematics II	EMA2201	1\2
	✓	✓	✓	✓		✓			✓		✓	✓		✓	Electronics II	ELE2202	1\2
	✓	✓	✓	✓		✓			✓		✓	✓		✓	Communications II	COM2203	1\2
✓	✓	✓	✓	✓		✓		✓	✓	✓	✓	✓		✓	Microprocessors II	MPS2204	1\2
✓		✓		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	Web Programming II	WPR2205	1\2
✓		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	Object Oriented Programming II	OOP2206	1\2
					✓	✓				✓	✓		✓	✓	Operating Systems	OPS2207	1\2
		✓			✓	✓	✓	✓		✓	✓		✓	✓	Mobile Computing	MCP2208	1\2

Curriculum Skill Chart																	
Learning outcomes required from the program																	
Scientific and transferable skills related to employability and personal development				Thinking skills			Special skills				Knowledge and understanding				Course Name	Course Code	The year
4 د	3 د	2 د	1 د	3 ج	2 ج	1 ج	4 ب	3 ب	2 ب	1 ب	4 أ	3 أ	2 أ	1 أ			
		✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	Embedded Systems I	EMB3101	1\3
✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Mobile Applications Development I	MAD3102	1\3
✓					✓	✓		✓	✓	✓	✓	✓	✓	✓	Wireless Communications Networks I	WCN3103	1\3
	✓		✓	✓	✓	✓	✓				✓		✓	✓	Human-Computer Interaction *	HCI3104	1\3
		✓			✓	✓					✓			✓	Digital Communications	DCM3105	1\3
✓		✓	✓	✓	✓	✓			✓		✓	✓	✓	✓	Computer Networks	CMN3106	1\3

	✓	✓				✓	✓			✓		✓	✓		Multimedia Systems	MMS3107	1\3
1\3																	
✓		✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	Embedded Systems II	EMB3201	1\3
	✓		✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	Mobile Applications Development II	MAD3202	1\3
✓		✓				✓	✓			✓	✓	✓	✓	✓	Wireless Communications Networks II	WCN3203	1\3
	✓					✓	✓			✓			✓		Antennas and Wave Propagation	AWP3204	1\3
✓	✓	✓				✓	✓					✓			Digital Signal Processing	DSP3205	1\3
	✓	✓	✓	✓	✓	✓	✓			✓		✓	✓		Computer Networks Protocols	CNP3206	1\3
✓						✓	✓			✓	✓	✓	✓		Database Systems	DBS3270	1\3

Curriculum Skill Chart

Learning outcomes required from the program	Learning outcomes required from the program																		
	Scientific and transferable skills related to employability and personal development	Thinking skills			Special skills				Knowledge and understanding				Course Name	Course Code					The year
	4	3	2	1	3	2	1	4	3	2	1	4	3	2	1				
	د	د	د	ج	ج	ج	ب	ب	ب	ب	ب	أ	أ	أ	أ				
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Project I	PRJ4101	1\4	
	✓		✓		✓	✓	✓	✓	✓	✓	✓	✓			✓	Mobile Communications I	MCM4102	1\4	
✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Project Management I	PMT4103	1\4	
	✓		✓		✓	✓	✓			✓	✓	✓	✓	✓	✓	Computer Networks Adminis	CNA4104	1\4	

																	tration		
																	Informat ion Theory and Coding *	ITC4 105	1\ 4
		✓	✓	✓		✓	✓		✓				✓		✓	✓	Network S Security *	NWS 4106	1\ 4
✓					✓	✓	✓					✓	✓		✓	✓			



		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			Project II	PRJ4 201	2\ 4
																	Mobile Commu nications II	MCM 4202	2\ 4
✓					✓	✓	✓	✓	✓	✓	✓				✓				
		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			Project Manage ment II	PMT 4203	2\ 4
																	Optical Fiber Commu nications *	OFC4 204	2\ 4
✓					✓	✓					✓	✓		✓	✓				
																	Soft Computi ng *	SCP4 520	2\ 4
✓		✓		✓	✓	✓		✓			✓	✓		✓	✓				
																	Internet of Things *	IOT4 206	2\ 4
		✓			✓	✓					✓	✓		✓	✓				

