

Ministry of Higher Education and Scientific Research  
University of Mosul  
College of Engineering  
Department of Electrical Engineering



# Courses Description

## Department of Electrical Engineering

### Electronic and Communications

### 2019-2020

## Academic Program Description form

**University Name:** University of Mosul

**Faculty / Institute:** College of Engineering

**Scientific Department:** Electrical Engineering

**Academic or Professional Program Name:**

B.Sc. Electrical Engineering / Electronics and Communication

B.Sc. Electrical Engineering / Power and Machines

**Final Certificate Name:** B.Sc. in Electrical Engineering

**Academic System:** Courses System + Bologna Process

**Description Preparation Date:** March, 2024

**File Completion Date:** March, 2024

**Signature:**

**Head of Department Name:**

**Dr. Mohammad Tariq Yaseen**

**Date:** March, 2024

**Signature:**

**Scientific Associate Name:**

**Dr. Ayman T.Hameed**

**Date:** March, 2024

**The file is checked by:** Department of Quality Assurance and University Performance

**Director of Quality Assurance and University Performance Department:**

**Date:**

**Signature:**

**Approval of the Dean**

a) Undergraduate

Courses / College of Engineering / University of Mosul / First level for the academic year 2019-2020 / Department of Electrical Engineering

Fall Semester / First Level								
Notes	Code	Pre-request	Units	Practical hours	Theoretical hours	Subject	Type	
	UOMC101	-	3	-	3	English Language	Compulsory	University requirements
	UOMC102	-	3	2	2	Computer	Compulsory	
	UOMC103	-	2	-	2	Rights and Freedoms	Compulsory	
	ENGC121	-	3	-	3	Calculus I	Compulsory	College requirements
	ENGC123	-	1	3	-	Engineering Drawings	Compulsory	
Compulsory for Dept. Students	ENGE133	-	2	-	2	Physics	Elective	
	ELCA100	-	4	2	3	Electrical Circuit Analysis I	Compulsory	Department requirements
			18	7	15	Total Hours		

Spring Semester / First Level								
Notes	Code	Pre-request	Units	Practical hours	Theoretical hours	Subject	Type	
	UOMC 100	-	2	-	2	Arabic Language	Compulsory	University requirements
The student should select one subject only (no. of units =2 only)	-	-	2	-	2	Manufacturing Processes	Elective	
	-	-	2	-	2	Environmental Pollution	Elective	
	-	-	2	-	2	Information Technology	Elective	
	ENGC122	Calculus I	3	-	3	Calculus II	Compulsory	College requirements
	ENGC124	Engineering Drawing	1	3	-	Auto-CAD	Compulsory	
Compulsory for Dept. Students	ENGE132	-	3	-	3	Engineering Mechanics	Elective	
	ELCA 150	Electrical Circuit Analysis I	4	2	3	Electrical Circuit Analysis II	Compulsory	Department requirements
	PHEC151	Physics	3	-	3	Electronic Physics	Compulsory	
			18	5	16	Total Hours		

Annual / College of Engineering / University of Mosul / Second Class for the academic year 2019-2020 / Department of  
Electrical Engineering / Electronics & Communications

Course No.	Subject	First Term			Second Term			Units No.
		Theo.	Pract.	App	Theo.	Pract.	App.	
EEC 201	Management & Industrial Safety	2	-	-	2	-	-	4
EEC 202	Mathematics II	3	-	1	3	-	1	6
EEC 203	Computer Programming	2	2	-	2	2	-	6
EEC 204	Electromagnetic Fields	2	-	1	2	-	1	4
EEC 205	Electronics I	2	-	1	2	-	1	4
EEC 206	Communications Principles	3	-	1	3	-	1	6
EEC 207	Power & Machines	2	-	1	2	-	1	4
EEC 208	Elective Subjects (Electrical Networks)	2	-	1	2	-	1	4
EEC 209	Electronics & Communications Lab.	-	3	-	-	3	-	4
Total		18	5	6	18	5	6	40
		29			29			

Annual / College of Engineering / University of Mosul / Third Class for the academic year 2019-2020 / Department of  
Electrical Engineering / Electronics & Communications

Course No.	Subject	First Term			Second Term			Units No.
		Theo.	Pract.	App	Theo.	Pract.	App.	
EEC 301	Statistics & Engineering Economics	2	-	-	2	-	-	4
EEC 302	Engineering Analysis	2	-	1	2	-	1	4
EEC 303	Radiation & Propagation	2	-	1	2	-	1	4
EEC 304	Digital Communications	3	-	1	3	-	1	6
EEC 305	Electronics II	2	-	1	2	-	1	4
EEC 306	Digital Electronics	2	-	1	2	-	1	4
EEC 307	Computer Engineering	2	-	1	2	-	1	4
EEC 308	Elective Subjects (Measurements)	2	-	1	2	-	1	4
EEC 309	Electronics & Communications Lab.	-	6	-	-	6	-	4
Total		17	17	6	7	17	6	7
		29			30			30

Note: The student is required to complete the summer training after the end of the second semester of the third level

Annual / College of Engineering / University of Mosul / Fourth class for the academic year 2019-2020 / Department of  
Electrical Engineering / Electronics & Communications

Course No.	Subject	First Term			Second Term			Units No.
		Theo.	Pract.	App.	Theo.	Pract.	App.	
EEC 401	Engineering Project	1	3	-	1	3	-	4
EEC 402	Engineering Control	3	-	1	3	-	1	6
EEC 403	Communication Engineering	3	-	-	3	-	-	6
EEC 404	Digital Signal Processing (DSP)	2	-	1	2	-	1	4
EEC 405	Microelectronic	2	-	1	2	-	1	4
EEC 406	Computer Networks	2	-	1	2	-	1	4
EEC 407	Elective Subjects (Computer interfacing systems)	2	-	-	2	-	-	4
EEC 408	Laboratories	-	6	-	-	6	-	4
Total		15	9	4	15	9	4	36
		28			28			

b) Postgraduate

	<b>Subject</b>	<b>Type</b>	<b>Hours</b>	<b>Units</b>	<b>Code</b>
<b>Master</b>	<b>Antennas and Wave (Elective)</b>	<b>Semesters</b>	<b>2</b>	<b>2</b>	<b>EEE644</b>
	<b>Microelectronics (Elective)</b>	<b>Semesters</b>	<b>2</b>	<b>2</b>	<b>EEE 653</b>
	<b>Digital Signal Processing (Compulsory)</b>	<b>Semesters</b>	<b>2</b>	<b>2</b>	<b>EEE652</b>
	<b>Engineering Analysis (Compulsory)</b>	<b>Semesters</b>	<b>2</b>	<b>2</b>	<b>EEE 640</b>
	<b>Modern Control Theory (Compulsory)</b>	<b>Semesters</b>	<b>2</b>	<b>2</b>	<b>EEE 647</b>
	<b>Modeling and Simulation( Compulsory)</b>	<b>Semesters</b>	<b>2</b>	<b>2</b>	<b>EEP 670</b>
	<b>Power Electronics (Compulsory)</b>	<b>Semesters</b>	<b>2</b>	<b>2</b>	<b>EEP 667</b>
	<b>A.C. Machines (Elective)</b>	<b>Semesters</b>	<b>2</b>	<b>2</b>	<b>EEP669</b>
	<b>Power System Analysis (Elective)</b>	<b>Semesters</b>	<b>2</b>	<b>2</b>	<b>EEP683</b>
	<b>Antennas and Wave (Elective)</b>	<b>Semesters</b>	<b>2</b>	<b>2</b>	<b>EEE646</b>
	<b>Microwave Devices (Elective)</b>	<b>Semesters</b>	<b>2</b>	<b>2</b>	
	<b>Computer Networks (Elective)</b>	<b>Semesters</b>	<b>2</b>	<b>2</b>	<b>EEE661</b>
	<b>Programmable Controllers( Compulsory)</b>	<b>Semesters</b>	<b>2</b>	<b>2</b>	<b>EEE680</b>
	<b>English Language II (Compulsory)</b>	<b>Semesters</b>	<b>2</b>	<b>2</b>	
	<b>Scientific Research Methods (Compulsory)</b>	<b>Semesters</b>	<b>1</b>	<b>1</b>	<b>EEE 690</b>
	<b>Electrical Drive (Elective)</b>	<b>Semesters</b>	<b>2</b>	<b>2</b>	<b>EEP 672</b>
<b>Advanced High Voltage (Elective)</b>	<b>Semesters</b>	<b>2</b>	<b>2</b>	<b>EEP 671</b>	
<b>Power System Protection (Elective)</b>	<b>Semesters</b>	<b>2</b>	<b>2</b>		



	<b>Subject</b>	<b>Type</b>	<b>Hours</b>	<b>Units</b>	<b>Code</b>
<b>PhD</b>	<b>Advanced Communication Systems (Elective)</b>	<b>Semesters</b>	<b>2</b>	<b>2</b>	<b>EED709</b>
	<b>CMOS Integrated Circuits (Elective)</b>	<b>Semesters</b>	<b>2</b>	<b>2</b>	
	<b>Advanced Antenna Theory (Elective)</b>	<b>Semesters</b>	<b>2</b>	<b>2</b>	<b>EED708</b>
	<b>Advanced Control Systems (Compulsory)</b>	<b>Semesters</b>	<b>2</b>	<b>2</b>	<b>EED710</b>
	<b>Advanced DSP (Compulsory)</b>	<b>Semesters</b>	<b>2</b>	<b>2</b>	
	<b>Advanced Topics in Electrical (Compulsory)</b>	<b>Semesters</b>	<b>2</b>	<b>2</b>	<b>EED720</b>
	<b>Advanced Electrical Drives (Elective)</b>	<b>Semesters</b>	<b>2</b>	<b>2</b>	<b>EED714</b>
	<b>Flexible A C Transmission System (FACTS) (Elective)</b>	<b>Semesters</b>	<b>2</b>	<b>2</b>	<b>EED706</b>
	<b>Power Systems Stability (Elective)</b>	<b>Semesters</b>	<b>2</b>	<b>2</b>	<b>EED712</b>
	<b>Wave Propagation (Elective)</b>	<b>Semesters</b>	<b>2</b>	<b>2</b>	<b>EED718</b>
	<b>Computer Network Security (Elective)</b>	<b>Semesters</b>	<b>2</b>	<b>2</b>	<b>EED717</b>
	<b>Advanced Microprocessors (Elective)</b>	<b>Semesters</b>	<b>2</b>	<b>2</b>	
	<b>English Language II (Compulsory)</b>	<b>Semesters</b>	<b>2</b>	<b>2</b>	
	<b>Research Methodology (Compulsory)</b>	<b>Semesters</b>	<b>1</b>	<b>1</b>	
	<b>&amp; Advanced Modeling Simulation (Compulsory)</b>	<b>Semesters</b>	<b>2</b>	<b>2</b>	<b>EED701</b>
	<b>Smart Grids and Renewable Energy (Compulsory)</b>	<b>Semesters</b>	<b>2</b>	<b>2</b>	<b>EED711</b>
	<b>Advanced Alternating Machines (Elective)</b>	<b>Semesters</b>	<b>2</b>	<b>2</b>	<b>EE768</b>
	<b>Advanced High Voltage DC (Elective)</b>	<b>Semesters</b>	<b>2</b>	<b>2</b>	
<b>: Modern Protection Systems (Elective)</b>		<b>2</b>	<b>2</b>	<b>EED704</b>	