Courses Description
Department of Electrical Engineering
Electronic and Communications
2022-2023

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

Semesters / College of Engineering / University of Mosul / First year for the academic year 2022-2023 / Department of Electrical Engineering

Notes	Code	Credits	Lab	Theoretical	Title
First Year / /First Semester					
	EE 101	2	-	2	Human Rights and Democracy
	EE 102	2	-	3	Digital Techniques I
	EE 103	1	3	-	Engineering Drawing, I
	EE 104	3	2	2	Computer fundamentals
	EE 105	2	-	2	Principle of Mechanical Eng. I
	EE 108	3	-	4	Basics of Electrical Engineering I
	EE 106	3	-	4	Calculus I
	EE 107	2	-	3	Electronics Physics I
	EE 109	1	2	-	Laboratories
		19	7	20	Total Hours

Semesters / College of Engineering / University of Mosul / First year for the academic year 2022-2023 / Department of Electrical Engineering

Notes	Code	Credits	Lab	Theoretical	Title
First Year / /Second Semester					
	EE 113	1	3	-	Engineering Drawing II
	EE 112	2	-	3	Digital Techniques II
	EE 114	3	2	2	Programing Language
	EE 115	2		2	Principle of Mechanical Eng. II
	EE 118	3	-	4	Basics of Electrical Engineering II
	EE 111	2	-	2	English Language
	EE 116	3	-	4	Calculus II
	EE 117	2	-	3	Electronics Physics II
	EE 119	1	2	-	Laboratories
		19	7	20	Total Hours

Courses / College of Engineering / University of Mosul / second level for the academic year 2022-2023 / Department of Electrical Engineering

						Fall Semester / Second Level – E&C		
Notes	Code	Pre-request	Units	Practical hours	Theoretical hours	Subject	Type	
English Subject in this level equal 1 unit because it was 3 units in first level	The name will be standardized by the course unit/college	-	1	-	1	English Language-Pre intermediate	Compulsory	University Requirements
Compulsory for Dept. Students	ENGC228	Calculus II	3	-	3	Engineering Mathematics I	Elective	College Requirements
	ACOM201	Electrical Circuit Analysis II, Calculus II	4	-	4	Analog Communications	Compulsory	Department Requirements
	ENET202	Electrical Circuit Analysis II, Calculus II	4	-	4	Electric Networks	Compulsory	
	COMP206	Computer	3	2	2	Computer Programming	Compulsory	
	ELAB210	Electrical Circuit Analysis II	1	2	-	Electrical Engineering Lab I	Compulsory	
The student should select one subject only (no. of units =2 only)	SOCS 203	Electronics Physics	2	-	2	Solar Cell Systems	Elective	
	ELCI214	Electronics Physics				Electronic Circuits	Elective	
			18	4	16	Total Hours		

Spring Semester / Second Level – E&C								
Notes	Code	Pre-request	Units	Practical hours	Theoretical hours	Subject	Type	
Compulsory for Dept. Students	ENGC 230	Calculus I	3	-	3	Engineering Mathematics II	Elective	College Requirements
	PHEC 251	Electronics Physics	3	-	3	Analog Electronics	Compulsory	Department Requirements
	SIGS 252	Electrical Circuit ,Analysis I Calculus II	2	-	2	Systems & Signals	Compulsory	
	EMGT 254	Electrical Circuit ,Analysis II Calculus I	3	-	3	Electromagnetic Theory	Compulsory	
	MAPS 253	Electrical Circuit Analysis II, Calculus II	2	-	2	Machines & Power Systems	Compulsory	
	DIGT208	-	2	-	2	Digital Techniques	Compulsory	
	ELAB 260	Electrical Engineering Lab I	1	2	-	Electrical Engineering Lab II	Compulsory	
The student should select one subject only (no. of units =2 only)	MODS 262	Computer Programming	2	2	1	Basics of Modeling and Simulation	Elective	
	COAP 264	Computer Programming				Computer Applications		
			18	4	16	Total Hours		

Courses / College of Engineering / University of Mosul / Third level for the academic year 2022-2023 / Department of Electrical Engineering

Notes	Code	Pre-request	Units	Practical hours	Theoretical hours	Subject	Type	
					Fall Semester / Third Level – E&C			
Compulsory for Dept. Students	ENGE 320	Calculus I, II	2	-	2	Numerical Analysis	Elective	College Requirements
	ENGC 327	-	2	-	2	Statistics	Compulsory	
	DCOM 301	Analog Communications	2	-	2	Digital Communications I	Compulsory	Department Requirements
	RADP 303	Electromagnetic Theory	3	-	3	Radiation & Propagation	Compulsory	
	ELCD 305	Analog Electronics	3	-	3	Electronic Devices	Compulsory	
	DELC 307	Digital Techniques	3	-	3	Digital Electronics	Compulsory	
	ELAB 309	Electrical Engineering Lab II	2	6	-	Electronics & Communications Lab I	Compulsory	
The student should select one subject only (no. of units =2 only)	PWEL 311	Electrical Circuit Analysis I	2	-	2	Power Electronics	Elective	
	SPTC 313	Analog Communications				Special Topics in Communications		
The student should select one subject only (no. of units =2 only)	RENE 314	Electrical Circuit Analysis I	2	-	2	Renewable Energy	Elective	
	ELCD 312	Electrical Circuit Analysis I				Electrical Circuits Design		
			21	6	19	Total Hours		

				Spring Semester / Third Level – E&C			
Notes	Code	Pre-request	Units	Practical hours	Theoretical hours	Subject	Type	
	-	-	2	-	2	English Language Intermediate	Compulsory	University Requirements
	ENGC 326	-	2	-	2	Engineering Economic	Compulsory	College Requirements
	MINS 350	Electrical Circuit Analysis I	3	-	3	Electrical Measurements	Compulsory	Department Requirements
	ICOS 352	Signals & Systems	3	-	3	Introduction to Control Systems	Compulsory	
	COME 351	Computer Programming	3	-	3	Computer Architecture	Compulsory	
	DCOM 353	Digital Communications I	3	-	3	Digital Communications II	Compulsory	
	ELAB 355	Electronic & Communications Lab 1	2	6	-	Electronics & Communications Lab II	Compulsory	
The student should select one subject only (no. of units =2 only)	PCON 362	Digital Techniques	2	-	2	Programmable Controller	Elective	
	AINT 364	Digital Techniques				Artificial Intelligence		
			21	6	18	Total Hours		

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

Courses / College of Engineering / University of Mosul / Fourth level for the academic year 2022-2023 / Department of Electrical Engineering

Fall Semester / Fourth Level – E&C								
Notes	Code	Pre-request	Units	Practical hours	Theoretical hours	Subject	Type	
	SATC 401	Digital Communication II	2	-	2	Satellite Communications	Compulsory	Department Requirements
	COSA 402	Introduction to Control Systems	4	-	4	Control Systems Analysis	Compulsory	
	CNET 403	Digital Communication II	3	-	3	Computer Networks	Compulsory	
	DSIP405	Signals & Systems	2	-	2	Digital Signal Processing	Compulsory	
	MIWA 411	Analog Electronics	2	-	2	Microwaves	Compulsory	
	ELAB 407	Electronic & Communication Lab II	2	6	-	Electronics & Communications Lab III	Compulsory	
	GPRO 409	All compulsory department requirements for the third level	2	-	2	Graduation Project I	Compulsory	
The student should select one subject only (no. of units =2 only)	FOCS 415	Digital Communication II	2	-	2	Fiber-Optic Communication Systems	Elective	
	RADAR 413	Digital Communication II				RADAR		
			19	6	17	Total Hours		

Notes	Code	Pre-request	Units	Practical hours	Theoretical hours	Subject	Type	
					Spring Semester / Fourth Level – E&C			
	UOMC 104	-	2	-	2	Professional Ethics	Compulsory	University Requirements
	-	-	2	-	2	-English Language Upper Intermediate	Compulsory	University Requirements
	ENGC425		2	-	2	Engineering Management	Compulsory	College Requirements
	MELC453	Electronic Devices	4	-	4	Microelectronics	Compulsory	Department Requirements
	MCOM451	Satellite Communication	3	-	3	Mobile Communications	Compulsory	Department Requirements
	GPRO457	Graduation Project I	2	-	2	Graduation Project II	Compulsory	Department Requirements
	ELAB455	Electronics & Communications Lab III	2	6	-	Electronics & Communications Lab IV	Compulsory	Department Requirements
The student should select one subject only (no. of units =2 only)	WNSE 459	Computer Networks	2	-	2	Wireless Networks & Security	Elective	Department Requirements
	CINT461	Computer Architecture				Computer Interface Systems	Elective	Department Requirements
	DIMP463	Digital Signal Processing				Digital Image Processing	Elective	Department Requirements
			19	6	17	Total Hours		

b) Postgraduate

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

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