

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

2023-2024

a) Undergraduate

Bologna Process / College of Engineering / University of Mosul / First level for the academic year 2023-2024 / Department of Electrical Engineering

Fall Semester / First Level						
Notes	Units	Practical hours	Theoretical hours	Subject	Type	
	2	-	2	Basics of Electrical Engineering I	Core learning activity	Department requirements
	3	2	2	Mathematics I	Basic learning activities	
	3	-	2	Engineering drawing	Support or related learning activity	
	8	2	4	Physics	Basic learning activities	
	6	-	4	mechanics Engineering	Support or related learning activity	
	4	2	2	Computer	Basic learning activities	University requirements
	4	-	2	Arabic Language	Support or related learning activity	
	30	6	18	Total Hours		

Spring Semester / First Level							
Notes	Code	Units	Practical hours	Theoretical hours	Subject	Type	
	UOM102	2	-	2	Basics of Electrical Engineering II	Core learning activity	Department requirements
	UOM104	2	-	2	Mathematics II	Basic learning activities	
	EE111	3		3	Computer Programming	Basic learning activities	
	EE108	8	2	4	Digital Techniques	Core learning activity	
	EE109	6	-	4	Electronics Physics	Basic learning activities	
	EE110	6	2	2	Democracy and Human Rights	Support or related learning activity	University requirements
	EE112	3	-	3	English Language	Support or related learning activity	
		30	4	18	Total Hours		

Semesters / College of Engineering / University of Mosul / second year for the academic year 2023-2024 / Department of
Electrical Engineering

Second Year/ First semester /Electronic and communications					
Code	Title	Theoretical	Lab.	Credits	Notes
EEC 201	Management and Industrial Safety I	2	-	2	
EEC 202	Engineering Mathematics I	4	-	3	
EEC 204	Electromagnetic Fields I	3	-	2	
EEC 205	Electronics Principles I	3	-	2	
EEC 206	Communication Principles I	4	-	3	
EEC 207	Electrical Power System	2	-	2	
EEC 203	Computer Applications I	3	2	3	
EEC 208	Electric Networks I	3	-	2	
EEC 209	Laboratories I	-	2	1	
		24	4	20	

Semesters / College of Engineering / University of Mosul / second year for the academic year 2023-2024 / Department of
Electrical Engineering

Second Year/Second semester /Electronic and communications					
Code	Title	Theoretical	Lab.	Credits	Notes
EEC 211	Management & Industrial Safety II	2	-	2	
EEC 212	Engineering Mathematics II	4	-	3	
EEC 214	Electromagnetic Fields II	3	-	2	
EEC 215	Electronics Principles II	3	-	2	
EEC 216	Communication Principles II	4	-	3	
EEC 217	Electrical Machines	2	-	2	
EEC 213	Computer Applications II	3	2	3	
EEC 218	Electric Networks II	3	-	2	
EEC 219	Laboratories II	-	2	1	
		24	4	20	

Courses / College of Engineering / University of Mosul / Second Level for the academic year 2023-2024 / 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	ENGE228	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)	SOC 203	Physics of Electronics	2	-	2	Solar Cell Systems	Elective	
	ELCI214	Physics of Electronics				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	ENGE 230	Calculus I	3	-	3	Engineering Mathematics II	Elective	College requirements
	PHEC 251	Physics of Electronics	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 2023-2024 / Department of
Electrical Engineering

Fall Semester / Third Level – E&C								
Notes	Code	Pre-request	Units	Practical hours	Theoretical hours	Subject	Type	
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 357	Analog Communications				Special Topics in Communications		
The student should select one subject only (no. of units =2 only)	RENE 316	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
	MINC 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	II Digital Communications	Compulsory	
	ELAB 355	Electronic & Communication 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

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		

Spring Semester / Fourth Level – E&C

Notes	Code	Pre-request	Units	Practical hours	Theoretical hours	Subject	Type	
	UOMC 104	-	2	-	2	Professional Ethics	Compulsory	University requirements
	-	-	2	-	2	-English Language Upper Intermediate	Compulsory	
	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	
	GPRO457	Graduation Project I	2	-	2	Graduation Project II	Compulsory	
	ELAB455	Electronics & Communications Lab III	2	6	-	Electronics & Communications Lab IV	Compulsory	
The student should select one subject only (no. of units =2 only)	WNSE 459	Computer Networks	2	-	2	Wireless Networks & Security	Elective	
	CINT461	Computer Architecture				Computer Interface Systems		
	DIMP463	Digital Signal Processing				Digital Image Processing		
			19	6	17	Total Hours		