



Electrical Engineering Curriculum



كلية الهندسة
College of Engineering



جامعة المجمعة
Majmaah University

Electrical Engineering Curriculum. Semester: First. Academic Year: 2018\2019.

Preparatory Year:

Fall Semester

Course Code	Course Title	Pre-Req.	Co-Req.	CH	Hours
PENG 111	English Language 1			8	
PMTH 112	Introduction to Mathematics 1			2	
PCOM 113	Computer Skills			2	
PSSC 114	Communication and Education Skills			2	
				14	

Spring Semester

Course code	Course Title	Pre-Req.	Co-Req.	CH	Hours
PENG 121	English Language			6	
PMTH 127	Introduction to Mathematics 2			4	
PENG 123	Scientific and Engineering English Language			2	
PPHS 128	Physics			3	
				15	

General Electrical Engineering Courses

Fall Semester

First Year

Course Code	Course Title	Pre-Req.	Co-Req.	CH	Hours
MURE	University Requirement	---	---	2	(2,0,0)
MATH 105	Differential Calculus	---	---	3	(3,1,0)
PHYS103	General Physics	---	---	4	(3,1,2)
GE 101	Fundamentals of Engineering Technology	---	---	2	(1,0,2)
GE 102	Fundamentals of Engineering Drawing	---	---	3	(1,0,4)
GE 103	Engineering Mechanics (Statics)	---	---	3	(3,1,0)
				17	

Spring Semester

Course code	Course Title	Pre-Req.	Co-Req.	CH	Hours
MATH 106	Integral Calculus	MATH 105	---	3	(3,1,0)
MATH 107	Algebra and Analytical Geometry	---	---	3	(3,1,0)
PHY 108	Physics 2	PHYS 103	---	3	(3,1,0)
GE 108	Engineering Mechanics (Dynamics)	GE 103	---	3	(3,1,0)
GE 105	Engineering Chemistry	---	---	3	(3,1,0)
EE 101	Fundamentals of Electric Circuits	---	MATH 107	3	(3,1,0)
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Fall Semester

Second Year

Course Code	Course Title	Pre-Req.	Co-Req.	CH	Hours
MURE	University Requirement			2	(2,0,0)
MATH 204	Differential Equations	MATH 106	---	3	(3,1,0)
EE 209	Basic Electronic Devices and Circuits	---	EE 101	3	(3,1,0)
EE 202	Electric Circuits Analysis	EE 101	---	3	(3,1,0)
EE 205	Electric Circuits Lab.	---	EE 202 +EE 101	1	(0,0,2)
EE 206	Electromagnetics 1	MATH 107	---	3	(3,1,0)
EE 208	Logic Design	---	---	3	(3,1,0)
				18	

Spring Semester

Course code	Course Title	Pre-Req.	Co-Req.	CH	Hours
STAT 201	Statistics and Probability	---	---	3	(3,1,0)
CEN 210	Introduction To Programming	---	---	3	(2,0,2)
MATH 309	Advanced Mathematics	MATH 204	---	3	(3,1,0)
EE 207	Logic Design Lab.	---	EE 208	1	(0,0,2)
EE 212	Basics of Electronic Devices and Circuits Lab.	EE 209	---	1	(0,0,2)
EE 221	Signals and Systems Analysis	MATH 204	---	3	(3,1,0)
EE 234	Electromagnetics 2	EE 206	---	3	(3,1,0)
				17	

Fall Semester

Third Year

Course Code	Course Title	Pre-Req.	Co-Req.	CH	Hours
MURE	University Requirement	---	---	2	(2,0,0)
GE 306	Engineering Report Writing	STAT 201	---	2	(2,0,0)
EE 371	Fundamentals of Electrical Power Systems	EE 206 MATH 309	---	2	(2,1,0)
EE 375	Principles of Electric Power and Machines Lab	---	EE 388 EE 371	1	(0,0,2)
EE 388	Principles of Electric Machines	EE 202	---	3	(3,1,0)
EE 322	Communications Principles	EE 221	---	3	(3,1,0)
EE 323	Communications Principles Lab.	---	EE 322	1	(0,0,2)
EE 341	Automatic Control Systems	EE 221 MATH 309	---	3	(3,1,0)
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EE 399	Engineering Practice	0 Credit Hours
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Track: Power & Machine

Third Year

Spring Semester					
Course code	Course Title	Pre-Req.	Co-Req.	CH	Hours
MURE	University Requirement			2	(2,0,0)
MATH 254	Numerical Methods	MATH 204	---	3	(3,1,0)
EE 307	Analog and Digital Measurements	EE 208	---	3	(3,1,0)
EE 308	Measurements and Control Lab.	---	EE 307 EE 341	1	(0,0,2)
EE 360	Microprocessors	EE 208 EE 209	---	3	(3,1,0)
EE 389	Electric Machines	EE 388	---	3	(3,1,0)
EE 372	Electric Power Systems Analysis	EE 388 EE 371	---	3	(3,1,0)
				18	

Fourth Year

Fall Semester					
Course Code	Course Title	Pre-Req.	Co-Req.	CH	Hours
MURE	University Requirement			2	(2,0,0)
GE 407	Engineering Economy	---	---	2	(2,1,0)
EE 462	Microprocessors Lab	EE 360	---	1	(0,0,2)
EE 473	Electric Power and Machine Lab 2	---	EE 372 EE 389	1	(0,0,2)
EE 474	Power Electronics	EE 388	---	3	(3,1,0)
EE 476	Power Systems Protection	EE 372	---	3	(3,1,0)
EE 471	High-Voltage Engineering Systems	EE 371	---	2	(2,1,0)
EE 498	Senior Design (1)	---	---	2	(1,0,2)
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Spring Semester					
Course code	Course Title	Pre-Req.	Co-Req.	CH	Hours
MURE	University Requirement			2	(2,0,0)
GE 408	Engineering Project Management		---	2	(2,1,0)
EE 472	Distribution System Planning	EE 372	---	2	(2,1,0)
EE 475	Applied Control	EE 341	---	3	(3,1,0)
EE 479	Protection & High Voltage Lab.	EE 471	---	1	(0,0,2)
EE 4xx	Elective (1)	---	---	3	(3,1,0)
EE 4xx	Elective (2)	---	---	3	(3,1,0)
EE 499	Senior Design (2)	EE 498	---	2	(1,0,2)
				18	

Track: Communications & Electronics

Third Year

Spring Semester					
Course code	Course Title	Pre-Req.	Co-Req.	CH	Hours
MURE	University Requirement	---	---	2	(2,0,0)
MATH 254	Numerical Methods	MATH 204	---	3	(3,1,0)
EE 307	Analog and Digital Measurements	EE 208	---	3	(3,1,0)
EE 308	Measurements and Control Lab.	---	EE 307 EE 341	1	(0,0,2)
EE 360	Microprocessors	EE 208 EE 209	---	3	(3,1,0)
EE 324	Digital Signal Processing	EE 221	---	3	(3,1,0)
EE 325	Digital Communications	EE 322	---	3	(3,1,0)
				18	

Fourth Year

Fall Semester					
Course Code	Course Title	Pre-Req.	Co-Req.	CH	Hours
MURE	University Requirement	---	---	2	(2,0,0)
GE 407	Engineering Economy	---	---	2	(2,1,0)
EE 462	Microprocessors Lab	EE 360	---	1	(0,0,2)
EE 414	Analog and Digital Electronic Circuits	EE 209	---	3	(3,1,0)
EE 420	Analog and Digital Electronic Circuits Lab	---	EE 314	1	(0,0,2)
EE 427	Communication and Signal Processing Lab.	EE 324 EE 325	---	1	(0,0,2)
EE 435	Antennas & Wave Propagation	EE 234	---	3	(3,1,0)
EE 436	Antennas and Wave Propagation Lab.	---	EE 435	1	(0,0,2)
EE 498	Senior Design (1)	---	---	2	(1,0,2)
				16	

Spring Semester					
Course Code	Course Title	Pre-Req.	Co-Req.	CH	Hours
MURE	University Requirement	---	---	2	(2,0,0)
GE 408	Engineering Project Management	GE 407	---	2	(2,1,0)
EE 415	VLSI	EE 314	---	3	(3,1,0)
EE 426	Wireless Communications	EE 325	---	3	(3,1,0)
EE 4xx	Elective (2)	---	---	3	(3,1,0)
EE 4xx	Elective (3)	---	---	3	(3,1,0)
EE 499	Senior Design (2)	EE 498	---	2	(1,0,2)
				18	

Track: Control and Systems

Third Year

Spring Semester					
Course code	Course Title	Pre-Req.	Co-Req.	CH	Hours
MURE	University Requirement			2	(2,0,0)
MATH 254	Numerical Methods	MATH 204		3	(3,1,0)
EE 307	Analog and Digital Measurements	EE 208		3	(3,1,0)
EE 308	Measurements and Control Lab.		EE 307 EE 341	1	(0,0,2)
EE 360	Microprocessors	EE 208 EE 209		3	(3,1,0)
EE 343	Automatic Control	EE 341 EE 308		3	(3,1,0)
EE 362	Introduction to Robotics and Mechatronics	MATH 107 GE 108		3	(3,1,0)
				18	

Fourth Year

Fall Semester					
Course Code	Course Title	Pre-Req.	Co-Req.	CH	Hours
MURE	University Requirement			2	(2,0,0)
GE 407	Engineering Economy			2	(2,1,0)
EE 462	Microprocessors Lab	EE 360		1	(0,0,2)
EE 350	Discrete Event and Hybrid Systems	EE 221 EE 307		2	(2,1,0)
EE 451	Modeling and Simulation of Dynamic Systems	MATH 204 EE 343		3	(3,1,0)
EE 442	Automatic Control Lab	EE 343 EE 308		1	(0,0,2)
EE 452	Advanced system Engineering			3	(3,1,0)
EE 498	Senior Design (1)			2	(1,0,2)
				16	

Spring Semester					
Course Code	Course Title	Pre-Req.	Co-Req.	CH	Hours
MURE	University Requirement			2	(2,0,0)
GE 408	Engineering Project Management	GE 407		2	(2,1,0)
EE 363	Programmable Logic Controllers			2	(2,1,0)
EE 464	Robotics and Mechatronics Lab	EE 462 EE 362 EE 307 EE 308		1	(0,0,2)
EE 453	Introduction To Intelligent Systems			3	(3,1,0)
EE 4xx	Elective (2)			3	(3,1,0)
EE 4xx	Elective (3)			3	(3,1,0)
EE 499	Senior Design (2)	EE 498		2	(1,0,2)
				18	