

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

الرقم: .....  
التاريخ: / / ١٤  
المرفقات: .....



رؤية  
2030  
المملكة العربية السعودية  
KINGDOM OF SAUDI ARABIA



المملكة العربية السعودية  
وزارة التعليم  
جامعة الجوف  
كلية الهندسة  
قسم الهندسة الكهربائية

<b>Program Name: Electrical Engineering</b>
<b>Qualification Level : Bachelor of Science Degree</b>
<b>Department: Electrical Engineering</b>
<b>College: Engineering</b>
<b>Institution: Jouf University</b>

## Regular Track

Year	Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours (LT, LB, TU)	Type of requirements (Institution, College or Department)	
First Year	Level 1	ENGL 001	English Language (1)	Required	-	6 (5,5,10)	University	
		MTH 101	Introductory Mathematics	Required	-	3 (2,0,2)	College	
		CIS 101	Computer Skills	Required	-	3 (2,2,0)	University	
		EDU 101	University Life Skills	Required	-	2 (2,0,0)	University	
	<b>Total Credit Hours</b>						<b>14 (11,5,12)</b>	
	Level 2	ENGL 002	English Language (2)	Required	ENGL 001	6 (5,5,10)	University	
		MTH 102	Differential Calculus	Required	MTH 101	3 (2,0,2)	College	
		CHM 103	Chemistry	Required	-	3 (2,2,0)	College	
		CIS 102	Problem Solving and Programming	Required	CIS 101	3 (2,2,0)	University	
	<b>Total Credit Hours</b>						<b>15 (11,9,12)</b>	
Second Year	Level 3	ISL 103	Islamic Economic System	Required		2 (2,0,0)	University	
		MTH 203	Integral Calculus	Required	MTH 102	3 (2,0,2)	College	
		PHS 101	General Physics (1)	Required		4 (3,2,0)	College	
		ARB 100	Arabic Language Skills	Required		2 (2,0,0)	University	
		MEC 101	Engineering drawing	Required		2 (1,2,0)	College	
		MEC 102	Engineering Design (1)	Required		3 (2,2,0)	College	
		MEC 103	Engineering Economy	Required	MTH 102	2 (2,0,0)	College	
	<b>Total Credit Hours</b>						<b>18 (14,6,2)</b>	
	Level 4	ISL 107	Professional Ethics	Required		2 (2,0,0)	University	
		PHS 202	General Physics (2)	Required	PHS 101	4 (3,2,0)	College	
		MTH 204	Advanced Calculus	Required	MTH 203	3 (2,0,2)	College	
		MTH 281	Statistics and Probabilities	Required	MTH 203	3 (2,0,2)	College	
		MEC 104	Engineering Design (2)	Required	MEC 102	2 (1,2,0)	College	
		MEC 105	Basics of Engineering Technology	Required	MEC 101	2 (1,2,0)	College	
<b>Total Credit Hours</b>						<b>16 (11,6,4)</b>		
Third Year	Level 5	ISL 10X	University Elective (1)	Elective		2 (2,0,0)	University	
		ARB 102	Writing Skills	Required	ARB 100	2 (2,0,0)	University	
		ELE 200	Electrical Circuits (1)	Required	PHS 202	4 (3,2,1)	Department	
		ELE 204	Logic Design	Required	PHS 202	4 (3,2,1)	Department	
		ELE 207	Engineering Electromagnetics	Required	PHS 202	3 (3,0,0)	Department	
		MTH 305	Differential Equations	Required	MTH 204	3 (2,0,2)	College	
	<b>Total Credit Hours</b>						<b>18 (15,4,4)</b>	
	Level 6	ISL 10X	University Elective (2)	Elective		2 (2,0,0)	University	
		ELE 202	Electrical Circuits (2)	Required	ELE 200	3 (2,2,1)	Department	
		ELE 205	Signals and Systems Analysis	Required	MTH 204	3 (3,0,0)	Department	
		ELE 206	Engineering Management	Required	MEC 103	2 (2,0,1)	Department	
		ELE 211	Basic Electronics	Required	ELE 200	4 (3,2,1)	Department	
MTH 382		Numerical Methods	Required	MTH 305	3 (2,0,2)	College		
<b>Total Credit Hours</b>						<b>17 (14,4,5)</b>		
Fourth Year	Level 7	ELE 300	Electrical Measurements and Instrumentations	Required	ELE 211	4 (3,2,1)	Department	
		ELE 321	Communication Systems	Required	ELE 205	4 (3,2,1)	Department	
		ELE 331	Electromechanical Energy Conversion (1)	Required	ELE 207	3 (2,2,1)	Department	
		ELE 341	Electrical power systems (1)	Required	ELE 202	3 (2,2,1)	Department	
		ELE 351	Control Engineering (1)	Required	MTH 305 ELE 205	4 (3,2,1)	Department	
<b>Total Credit Hours</b>						<b>18 (13,10,5)</b>		

Year	Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours (LT, LB, TU)	Type of requirements (Institution, College or Department)	
Fifth Year	Level 8	ELE 302	Introduction to Microprocessors	Required	ELE 204	3 (2,2,0)	Department	
		ELE 311	Microelectronic Devices and Circuits	Required	ELE 211	3 (2,2,1)	Department	
		ELE 313	Industrial Electronics	Required	ELE 300	3 (2,2,1)	Department	
		ELE 342	Electrical power systems (2)	Required	ELE 341	3 (2,2,1)	Department	
		ELE 343	Power Electronics	Required	ELE 211 ELE 341	3 (2,2,1)	Department	
		<b>Total Credit Hours</b>					<b>15 (10,10,4)</b>	
	Level 9	ELE 421	Digital Communications	Required	ELE 321	3 (2,2,1)	Department	
		ELE 451	Digital Control Systems	Required	ELE 351	3 (2,2,1)	Department	
		ELE 490	Special topics in Electrical Engineering	Required	Pass 110 Credits	2 (2,0,0)	Department	
		ELE 4XX	Elective Course (1)	Elective	Department Approval	3	Department	
		ELE 491	Senior Design Project	Required	Pass 110 Credits	4 (2,4,0)	Department	
		<b>Total Credit Hours</b>					<b>15</b>	
		Level 10	EDU 102/ BUS 101	University Elective (3)	Elective		2 (2,0,0)	University
			ELE 422	Wireless Communications	Required	ELE 421	3 (3,0,0)	Department
			ELE 441	Renewable Energy	Required	ELE 341	3 (2,2,1)	Department
			ELE 4XX	Elective Course (2)	Elective	Department Approval	3	Department
ELE 4XX	Elective Course (3)		Elective	Department Approval	3	Department		
ELE 493	Field Training**		Required	Pass 110 Credits	2	Department		
<b>Total Credit Hours</b>					<b>16</b>			

# Cooperative Track

Year	Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours (LT, LB, TU)	Type of requirements (Institution, College or Department)
First Year	Level 1	ENGL 001	English Language (1)	Required	-	6 (5,5,10)	University
		MTH 101	Introductory Mathematics	Required	-	3 (2,0,2)	College
		CIS 101	Computer Skills	Required	-	3 (2,2,0)	University
		EDU 101	University Life Skills	Required	-	2 (2,0,0)	University
		<b>Total Credit Hours</b>					<b>14 (11,5,12)</b>
	Level 2	ENGL 002	English Language (2)	Required	ENGL 001	6 (5,5,10)	University
		MTH 102	Differential Calculus	Required	MTH 101	3 (2,0,2)	College
		CHM 103	Chemistry	Required	-	3 (2,2,0)	College
		CIS 102	Problem Solving and Programming	Required	CIS 101	3 (2,2,0)	University
		<b>Total Credit Hours</b>					<b>15 (11,9,12)</b>
Second Year	Level 3	ISL 103	Islamic Economic System	Required		2 (2,0,0)	University
		MTH 203	Integral Calculus	Required	MTH 102	3 (2,0,2)	College
		PHS 101	General Physics (1)	Required		4 (3,2,0)	College
		ARB 100	Arabic Language Skills	Required		2 (2,0,0)	University
		MEC 101	Engineering drawing	Required		2 (1,2,0)	College
		MEC 102	Engineering Design (1)	Required		3 (2,2,0)	College
		MEC 103	Engineering Economy	Required	MTH 102	2 (2,0,0)	College
	<b>Total Credit Hours</b>					<b>18 (14,6,2)</b>	
	Level 4	ISL 107	Professional Ethics	Required		2 (2,0,0)	University
		PHS 202	General Physics (2)	Required	PHS 101	4 (3,2,0)	College
		MTH 204	Advanced Calculus	Required	MTH 203	3 (2,0,2)	College
		MTH 281	Statistics and Probabilities	Required	MTH 203	3 (2,0,2)	College
		MEC 104	Engineering Design (2)	Required	MEC 102	2 (1,2,0)	College
		MEC 105	Basics of Engineering Technology	Required	MEC 101	2 (1,2,0)	College
<b>Total Credit Hours</b>					<b>16 (11,6,4)</b>		
Third Year	Level 5	ISL 10X	University Elective (1)	Elective		2 (2,0,0)	University
		ARB 102	Writing Skills	Required	ARB 100	2 (2,0,0)	University
		ELE 200	Electrical Circuits (1)	Required	PHS 202	4 (3,2,1)	Department
		ELE 204	Logic Design	Required	PHS 202	4 (3,2,1)	Department
		ELE 207	Engineering Electromagnetics	Required	PHS 202	3 (3,0,0)	Department
		MTH 305	Differential Equations	Required	MTH 204	3 (2,0,2)	College
	<b>Total Credit Hours</b>					<b>18 (15,4,4)</b>	
	Level 6	ISL 10X	University Elective (2)	Elective		2 (2,0,0)	University
		ELE 202	Electrical Circuits (2)	Required	ELE 200	3 (2,2,1)	Department
		ELE 205	Signals and Systems Analysis	Required	MTH 204	3 (3,0,0)	Department
		ELE 206	Engineering Management	Required	MEC 103	2 (2,0,1)	Department
ELE 211		Basic Electronics	Required	ELE 200	4 (3,2,1)	Department	
MTH 382		Numerical Methods	Required	MTH 305	3 (2,0,2)	College	
<b>Total Credit Hours</b>					<b>17 (14,4,5)</b>		
Fourth Year	Level 7	ELE 300	Electrical Measurements and Instrumentations	Required	ELE 211	4 (3,2,1)	Department
		ELE 321	Communication Systems	Required	ELE 205	4 (3,2,1)	Department
		ELE 331	Electromechanical Energy Conversion (1)	Required	ELE 207	3 (2,2,1)	Department
		ELE 341	Electrical power systems (1)	Required	ELE 202	3 (2,2,1)	Department
		ELE 351	Control Engineering (1)	Required	MTH 305 ELE 205	4 (3,2,1)	Department
		<b>Total Credit Hours</b>					<b>18 (13,10,5)</b>

Year	Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours (LT, LB, TU)	Type of requirements (Institution, College or Department)	
	Level 8	ELE 302	Introduction to Microprocessors	Required	ELE 204	3 (2,2,0)	Department	
		ELE 311	Microelectronic Devices and Circuits	Required	ELE 211	3 (2,2,1)	Department	
		ELE 313	Industrial Electronics	Required	ELE 300	3 (2,2,1)	Department	
		ELE 342	Electrical power systems (2)	Required	ELE 341	3 (2,2,1)	Department	
		ELE 343	Power Electronics	Required	ELE 211 ELE 341	3 (2,2,1)	Department	
		ELE 421	Digital Communications	Required	ELE 321	3 (2,2,1)	Department	
		<b>Total Credit Hours</b>						<b>18 (12,12,5)</b>
Fifth Year	Level 9	ELE 491	Senior Design Project	Required	Pass 110 Credits	4 (2,4,0)	Department	
		ELE 492	Cooperative Training	Required	Pass 110 Credits	8	Department	
		<b>Total Credit Hours</b>						<b>12</b>
	Level 10	EDU 102/ BUS 101	University Elective (3)	Elective			2 (2,0,0)	University
		ELE 422	Wireless Communications	Required	ELE 421		3 (3,0,0)	Department
		ELE 441	Renewable Energy	Required	ELE 341		3 (2,2,1)	Department
		ELE 451	Digital Control Systems	Required	ELE 351		3 (2,2,1)	Department
		ELE 490	Special topics in Electrical Engineering	Required	Pass 110 Credits		2 (2,0,0)	Department
	ELE 4XX	Elective Course (1)	Elective	Department Approval		3	Department	
	<b>Total Credit Hours</b>						<b>16</b>	

### (List of Elective Courses)

Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College or Department)
ELE 401	Biomedical Signals and Systems	Elective	Dep. Approval	3 (2,2,1)	Department
ELE 402	Biomedical Instrumentation	Elective	Dep. Approval	3 (2,2,1)	Department
ELE 411	Digital Communication Electronics	Elective	ELE 311 Dep. Approval	3 (2,2,1)	Department
ELE 412	Low Power VLSI Circuit Design	Elective	ELE 311 Dep. Approval	3 (2,2,1)	Department
ELE 413	Principles of Nanoelectronics	Elective	ELE 311 Dep. Approval	3 (3,0,0)	Department
ELE 414	Microwave Circuits and Devices	Elective	ELE 311 Dep. Approval	3 (3,0,0)	Department
ELE 423	Antennas and Wave propagation	Elective	ELE 207 ELE 421 Dep. Approval	3 (2,2,1)	Department
ELE 424	Digital Signal Processing	Elective	ELE 205 Dep. Approval	3 (2,2,1)	Department
ELE 425	Satellite Communications	Elective	ELE 421 Dep. Approval	3 (2,2,1)	Department
ELE 426	Optical Communications	Elective	ELE 421 Dep. Approval	3 (2,2,1)	Department
ELE 427	Microwave Engineering	Elective	ELE 207 Dep. Approval	3 (2,2,1)	Department
ELE 428	Wireless Networking	Elective	ELE 421 Dep. Approval	3 (3,0,0)	Department
ELE 431	Electromechanical Energy Conversion (2)	Elective	ELE 331 Dep. Approval	3 (2,2,1)	Department
ELE 442	Switchgear and Protection of Power Systems	Elective	ELE 341 Dep. Approval	3 (2,2,1)	Department
ELE 443	High Voltage Engineering	Elective	ELE 342 Dep. Approval	3 (2,2,1)	Department
ELE 444	Power Transmission and Distribution	Elective	ELE 342 Dep. Approval	3 (2,2,1)	Department
ELE 445	Sustainable Energy Technology	Elective	Dep. Approval	3 (2,2,1)	Department
ELE 452	Introduction to Fuzzy and Neural Systems	Elective	ELE 451 Dep. Approval	3 (2,2,1)	Department
ELE 453	Control Engineering (2)	Elective	ELE 451 Dep. Approval	3 (2,2,1)	Department
ELE 454	Robotic Systems	Elective	ELE 313 ELE 451 Dep. Approval	3 (2,2,1)	Department
ELE 455	Selected Topics in Control Engineering	Elective	ELE 313 ELE 451	3 (3,0,0)	Department

			Dep. Approval		
ELE 456	Real Time Design Systems	Elective	ELE 302 ELE 451 Dep. Approval	3 (2,2,1)	Department
ELE 457	Embedded Systems	Elective	ELE 302 ELE 451 Dep. Approval	3 (2,2,1)	Department

**Total Credit Hours 162**