

## Degree and Study Plan

<b>College</b>	Engineering
<b>Department</b>	Energy and Sustainable Engineering
<b>Program</b>	Energy Engineering
<b>Degree Level</b>	Bachelor of Science
<b>Total Credit Hours</b>	137
<b>Cohort</b>	2018 and above

Summary of Credits	
University Requirements (UR)	12
University Electives (UE)	6
College Requirements (CR)	32
Program Requirements (PR)	78
Program Electives (PE)	9
<b>Total</b>	<b>137</b>

**For more information contact:** Dr. Mohamed Abd El-Hameed, HoD

**HoD:**

**Dean:**

**Date:** 30/09/2024

Year One	Semester 1 (Fall)				
	Course Code	Course Title	Credits	Pre-Request/ Co-Request*	Category
	ENGR111	Computer Applications	3		CR
	ARAB101	Arabic	3		UR
	PHYS111	Applied Physics	3		CR
	ENGL101	English Communication Skills I	3		UR
	MATH101	Calculus I	3		CR
	PHYS181	Physics Lab	1	PHYS111*	CR
	<b>Total Credits</b>		<b>16</b>		
	Semester 2 (Spring)				
Course Code	Course Title	Credits	Pre-Request/ Co-Request*	Category	
EGEN201	Energy and Sustainable Development	3		PR	
OMNS101	Oman Society	3		UR	
MATH102	Calculus II	3	MATH101	CR	
CHEM101	Chemistry	3		CR	
ENGL102	English Communication Skills II	3	ENGL101	CR	
CHEM181	Chemistry Lab	1	CHEM101*	CR	
<b>Total Credits</b>		<b>16</b>			

Year Two	Semester 3 (Fall)				
	Course Code	Course Title	Credits	Pre-Request/ Co-Request*	Category
	ENGR201	Engineering Drawing	3		CR
	EGEN221	Circuit Theory	3	MATH102	PR
	ENGR202	Technical Writing and Presentation	3	ENGL102	PR
	CVEN361	Environmental Engineering	3	CHEM101	PR
		University Elective	3		UE
	EGEN222	Circuit Theory Lab	1	MATH102, EGEN221*	PR
	<b>Total Credits</b>		<b>16</b>		
	Semester 4 (Spring)				
Course Code	Course Title	Credits	Pre-Request/ Co-Request*	Category	
EGEN251	Fluid Mechanics	3	MATH102	PR	
MATH204	Probability and Statistics	3	MATH102	CR	
EGEN261	Engineering Mechanics	3	MAHT102	PR	
EGEN262	Thermodynamics and Heat Transfer	3	PHYS111	PR	
EGEN263	Thermo-Fluid Lab	1	PHYS111, EGEN251*, EGEN262*	PR	
<b>Total Credits</b>		<b>13</b>			

Year Three	Semester 5 (Fall)				
	Course Code	Course Title	Credits	Pre-Request/ Co-Request*	Category
	MNGT 313	Entrepreneurship	3	60 CH	UR
	EGEN333	Electronics	3	EGEN221	PR
	EGEN320	Combustion and Heat Generation	3	EGEN201	PR
		University Elective	3		UE
	EGEN344	Power Systems	3	EGEN221	PR
	EGEN334	Electronics Lab	1	EGEN221, EGEN333*	PR
	<b>Total Credits</b>		<b>16</b>		
	Semester 6 (Spring)				
Course Code	Course Title	Credits	Pre-Request/ Co-Request*	Category	
EGEN385	Electrical Machines	3	EGEN221	PR	
ENGR404	Engineering Economics	3	MATH204	PR	
MATH305	Numerical Methods	3	MATH102, ENGR111	CR	
EGEN381	Fossil Fuel Power Plants	3	EGEN320	PR	
MATH203	Differential Equations	3	MATH102	CR	
<b>Total Credits</b>		<b>15</b>			

Year Four	Semester 7 (Fall)				
	Course Code	Course Title	Credits	Pre-Request/ Co-Request*	Category
	EGEN482	Instrumentation and Control Systems	3	EGEN344	PR
		Energy Engineering Electives	3		PE
	EGEN421	Wind Energy	3	EGEN385	PR
	CVEN471	Engineering Project Management	3	MNGT313	PR
	EGEN443	Power Electronics and Drives	3	EGEN333, EGEN385	PR
	<b>Total Credits</b>		<b>15</b>		
	Semester 8 (Spring)				
	Course Code	Course Title	Credits	Pre-Request/ Co-Request*	Category
EGEN471	Modeling and Simulation of Energy Systems	3	MATH305, MATH203	PR	
	Energy Engineering Electives	3		PE	
EGEN461	Energy Storage Technology	2	EGEN443	PR	
EGEN491	Capstone Design Project I	3	ENGR404	PR	
EGEN422	Solar Energy	3	EGEN443	PR	
EGEN481	Energy Lab I	1	EGEN421, EGEN422*	PR	
<b>Total Credits</b>		<b>15</b>			
Summer					
Course Code	Course Title	Credits	Pre-Request/ Co-Request*	Category	
ENGR322	Summer Internship	0		CR	

Year Five	Semester 9 (Fall)				
	Course Code	Course Title	Credits	Pre-Request/ Co-Request*	Category
	EGEN561	Hydrogen and Fuel Cell Fundamentals	3	CVEN361	PR
		Energy Engineering Electives	3		PE
	EGEN523	Distributed Generation	3	EGEN344	PR
	EGEN592	Capstone Design Project II	3	EGEN491	PR
	EGEN513	Energy Safety and Risk Assessment	2	EGEN201	PR
	EGEN582	Energy Lab II	1	EGEN461, EGEN561*	PR
<b>Total Credits</b>			<b>15</b>		

### List of Program Elective Courses:

A student must register in 3 courses with total of 9 credits hours following the program study plan:				
Course Code	Course Title	Credits	Pre-Request/ Co-Request*	
ENEN581	Climate Change	3	CVEN361	
EGEN203	Engineering Materials	3	MATH102	
EGEN583	Low Carbon Energy Technology	3	CVEN361	
EGEN573	Nuclear Energy	3	CVEN361	
EGEN575	Energy Buildings	3	CVEN361	
EGEN577	Waste and Energy	3	CVEN361	
EGEN584	Air Pollution and Control	3	CVEN361	
EGEN588	Digital Systems	3	EGEN221	
EGEN522	Energy Economics	3	MATH204	
EGEN579	Energy Selected Topics	3	CVEN361	
EGEN559	Energy Audit and Management	3	CVEN471	
EGEN511	Biofuel, Geothermal, & Biomass	3	CVEN361	
EGEN372	Tidal and Wave Energy	3	EGEN201	
EGEN501	Power Quality	3	EGEN344	
EGEN502	Power System Protection	3	EGEN344	

### University Electives:

Choose 2 courses from this list:				
Course Code	Course Title	Credits	Pre-Request/ Co-Request*	
ARAB102	الأدب العربي	3		
ISLM101	Islamic Civilizations	3		
PHIL101	Introduction to Logic (Philosophy)	3		
SOCI101	Sociology	3		
PSYC100	مدخل إلى علم النفس	3		
FINA202A	التمويل الشخصي	3		
ECON101	الاقتصاد الجزئي	3		
FAID101	First Aid	3		
PUHE211	Introduction to Public Health	3		
LAWC101	القانون في حياتنا	3		
LAWC102	التشريعات الوظيفية	3		
LAWC103	نظام الأسرة	3		