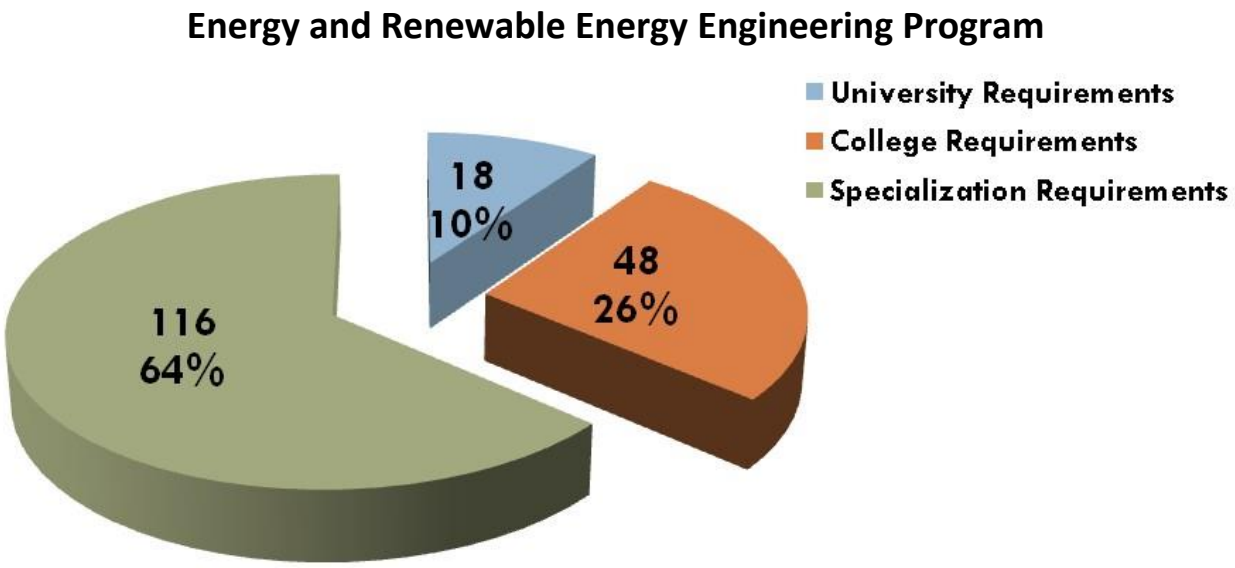

Energy and Renewable Energy Engineering Program Mission and Goals

Program Mission

Our mission at The Energy and Renewable Energy Program is to position ourselves amongst worldwide leaders in energy education through a commitment to build creative engineering minds. These minds will serve in local, regional, and international energy and renewable energy markets to provide original solutions while respecting a sense of community as well as the environment. Our academic staff are keen on providing the best-in-class teaching experience, transferring knowledge, and supporting students through tackling real-life applications and challenges guided by the best international practices. Our up-to-date courses concentrating on renewable energies are uniquely designed to function globally with adaptations to serve the local and regional contexts.

Program Goals

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University Requirements

The student will study (6) General Education Elective Courses (humanities) selected by him from the following list of courses, with a total of (18) credit hours.

Course Code	Course Title	Credit Hours
HUM 011	English Language	0
HUM 012	German Language	3
HUM 013	Technical Writing and Communication	3
HUM 014	Engineering Profession, Practice, and Responsibilities	3
HUM 111	Engineering Economy	3
HUM 112	Health and Wellness	3
HUM 211	Impact of Technology on Society	3
HUM 212	Introduction to Marketing	3
HUM 311	Engineering Management	3
HUM 312	Human Resource Management	3
HUM 313	Engineering Law	3

College Requirements

Basic Science Courses

Student must study the following list of courses as basic science requirements:

Course Code	Course Title	Credit Hours
PHM 012	Calculus for Engineering (1)	3
PHM 013	Calculus for Engineering (2)	3
PHM 014	Linear Algebra and Analytical Geometry	3
PHM 022	Waves, Electricity, and Magnetic Fields	3
PHM 032	Engineering Mechanics (1) - Statics	3
PHM 033	Engineering Mechanics (2) - Dynamics	3
PHM 042	General Chemistry	3
PHM 113	Calculus for Engineering (3)	3
PHM 114	Statistics and Probability for Engineering	3
PHM 115	Differential Equations and Partial Differential Equations	3

Basic Engineering Courses

Student must study the following list of courses as Basic Engineering requirements:

Course Code	Course Title	Credit Hours
CSE 012	Engineering Computation	3
MDP 024	Production Engineering	3
MDP 061	Engineering Design and Graphics	4
MEP 112	Thermodynamics	3
MDP 132	Structures and Properties of Materials	3

General Specialization Courses for Energy and Renewable Energy Engineering Program

Course Code	Course Title	Credit Hours
MDP 113	Production Engineering & Manufacturing (1)	2
EPM 115	Electrical Circuits	3
EPM 116	Electromagnetic Fields	3
EPM 122	Energy Resources and Regenerative Energy Resources	3
EPM 123	Energy Conversion	3
EPM 172	Electrical Measurements and Measuring Instruments	3
MEP 223	Heat Transfer	3
EPM 231	Electrical Machines (1)	3
ECE 232	Electronic Engineering	3
EPM 232	Electrical Machines (2)	3
EPM 233	Electrical Power Engineering	3
MEP 233	Fluid Mechanics	3
MDP 254	Theory of Machines	3
MDP 266	Machine Construction	3
EPM 281	Automatic Control Systems	3
MEP 284	Measurements Lab	3
EPM 324	Fundamentals of Photovoltaic	3
EPM 336	Microprocessor Based Automated Systems	3
EPM 337	Power Quality	3
EPM 353	Power Electronics (1)	3
EPM 354	Power Electronics (2)	3
MEP 354	Solar Energy (1)	3
MEP 363	Combustion and Furnaces	3
MDP 364	Machine Design	3
MEP 364	Internal Combustion Engines	3
MEP 365	Thermal Power Plants	3
MDP 368	Vibrations and Dynamics	3
EPM 372	Industrial or Field Training	3
EPM 425	Storage Energy Technologies	3
EPM 433	Network Interfacing of Renewable Resources	3
EPM 434	Economics of Generation, Transmission, and Operation	3
MEP 452	Solar Energy (2)	3
MEP 453	Wind Energy	3
EPM 497	Graduation Project (1)	3
EPM 498	Graduation Project (2)	3
	Total Credit Hours	104

Technical Electives for Energy and Renewable Energy Engineering Program

The student chooses (4) elective courses with a total of (12) credit hours such that (3) of them must be from one of the following fields while the fourth course must be from the other field.

- **Technical Electives for Mechanical Engineering Field**

Course Code	Course Title	Credit Hours
MEP 422	Phase Equilibrium and Mass Transfer	3
MEP 432	Turbo Machinery	3
MEP 433	Water Desalination	3
MDP 446	Quality Control, Quality Assurance, and Safety	3
MEP 472	Refrigeration and Air Conditioning	3
MEP 491	Individual Studies in Mechanical Engineering	

- **Technical Electives for Electrical Engineering Field**

Course Code	Course Title	Credit Hours
EPM 426	Transients in Electrical Machines	3
EPM 435	Advanced System Integrity	3
EPM 484	Electric Drives	3
EPM 485	Advanced Control on Power Systems	3
EPM 486	Computer Application in Electrical Power Systems	3
EPM 491	Individual Studies in Electrical Power and Machines	

Course Tree of Energy and Renewable Energy Engineering Program