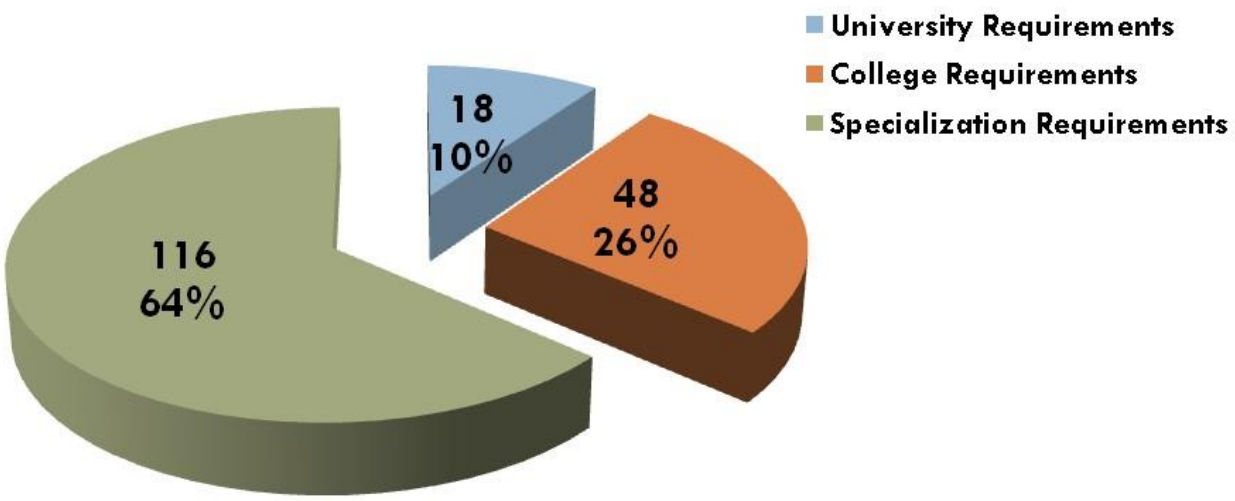

Communication Systems Engineering Program Mission and Goals

Program Mission

The Communication Systems Engineering Program graduates engineers with the ability to deal with the latest developments in the fields of advanced communication, optical and electronic systems to meet the requirements of the market at the moral and professional levels by creating the appropriate conditions for the development of different skills of students and faculty members and cooperate with specialized industrial and research bodies locally and internationally.

Program Goals

The Communication Systems Engineering Program graduates engineers with the ability to deal with the latest developments in the fields of advanced communication, optical and electronic systems to meet the requirements of the market at the moral and professional levels by creating the appropriate conditions for the development of different skills of students and faculty members and cooperate with specialized industrial and research bodies locally and internationally.

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 Communication Systems Engineering Program

Course Code	Course Title	Credit Hours
EPM 114	Electrical Circuits	3
PHM 116	Complex and Special Functions and Fourier Analysis	4
CSE 122	Computer Programming	3
PHM 123	Modern Physics and Quantum Mechanics	3
ECE 132	Electronic Materials	3
CSE 141	Logic Design	3
ECE 161	Electrostatics and Magnetostatics	3
CSE 212	Computer Architecture	3
PHM 212	Numerical Techniques	3
PHM 221	Optical and Thermal Physics	3
ECE 233	Solid State Electronic Devices	3
ECE 242	Electronic Circuits (1)	4
ECE 252	Signals and Systems	4
ECE 253	Analog Communication Systems	3
ECE 254	Digital Signal Processing	3
ECE 261	Engineering Electromagnetics	3
ECE 262	Waves and Transmission Lines	4
ECE 343	Electronic Circuits (2)	3
ECE 344	Digital Circuit Design	3
ECE 354	Digital Communications	3
ECE 355	Communication Networks	3
ECE 363	Antenna Engineering and Propagation	3
CSE 373	Control Systems	3
CSE 435	Computer Networks	3
ECE 458	Information Theory and Coding	3
ECE 495	Introduction to Decision Analysis	3
ECE 496	High-Tech Entrepreneurship	3
ECE 497	Graduation Project (1)	3
ECE 498	Graduation Project (2)	4
	Total Credit Hours	**92**

Technical Electives for Communication Systems Engineering Program

Technical electives are distributed in three fields: **Signals and Communication Systems**, **Circuits and Systems**, and **Physical and Wave Electronics**. The student has to select eight technical elective courses for a total of (24) credit hours with at least five of these courses from one of the mentioned fields.

Field	Course Code	Course Title	Credit Hours
Signals and Communication Systems	ECE 357	Acoustics	3
	ECE 358	Satellite Communications	3
	ECE 359	Statistical Signal Processing	3
	CSE 367	Digital Image Processing	3
	CSE 445	Multimedia Engineering	3
	ECE 459	Wireless and Mobile Communications	3
	CSE 491	Network Security	3
	ECE 491	Selected Topics in Signals and Communication Systems	3

Field	Course Code	Course Title	Credit Hours
Circuits and Systems	CSE 341	Introduction to Embedded Systems	3
	ECE 372	Electronic Measurements and Instrumentation	3
	ECE 381	VLSI Technology	3
	ECE 382	Analog Integrated Circuit Design	3
	ECE 486	Analog Integrated Systems Design	3
	ECE 487	VLSI Design and Automation	3
	ECE 488	RF Circuit Design	3
	ECE 492	Slected Topics in Circuits and Systems	3

Field	Course Code	Course Title	Credit Hours
Physical and Wave Electronics	ECE 336	Optoelectronic Devices	3
	ECE 337	Principles of Nanoelectronics	3
	ECE 356	Optical Communication Systems	3
	ECE 364	Microwave Circuits	3
	ECE 411	Integrated Optics and Optical MEMS	3
	ECE 463	Microwave Devices	3
	ECE 464	Microwave Measurements	3
	ECE 493	Selected Topics in Physical and Wave Electronics	3

Course Tree of Communication Systems Program