

Engineering Science- Robotics Specialization Curriculum

Level	Freshman Year			Spring Term		
Semester	Fall Term			Spring Term		
	Course Code	Description	Units	Course Code	Description	Units
	CHE201	General Chemistry	1	MAT128	Calculus B	1
	MAT127	Calculus A	1	PHY202	General Physics II	1
	PHY201	General Physics I	1	College Core I	Literary, Visual or Performing Arts	1
	FYS	First Year Seminar	1	CSC220	Computer Science	1
	ENG144	Fundamentals of Engineering Design	0.5	ENG145	Introduction to Engineering Science and Design	0.5
	ENG095	Introduction to Engineering	0			
	Total			Total		
	4.5			4.5		

Level	Sophomore Year					
Semester	Fall			Spring		
	Course Code	Description	Units	Course Code	Description	Units
	ENG212	Circuit Analysis	1	MAT229	Multivariable Calculus	1
	CSC230	Computer Science II	1	MEC251	Strength of Materials	1
	ENG232	Manufacturing Processes	1	ENG262	Dynamics	1
	ENG272	Advanced Engineering Mathematics I	1	CSC270	Discrete Structures	1
	ENG222	Statics	1	ENG214	Circuit Analysis Laboratory	0.5
	Total			Total		
	5			4.5		

Level	Junior Year					
Semester	Fall			Spring		
	Course Code	Description	Units	Course Code	Description	Units
	ENG312	Digital Circuits and Microprocessors	1	ELC321	Signals and Systems	1
	MEC311	Mechanical Design Analysis I	1	ELC251	Electronics	1
	ENG342	Advanced Engineering Mathematics II	1	MEC381	Introduction to Mechatronics	1
	ENG093	Engineering Seminar III	0	ENG348	Systems Engineering and Economy	1
	ECO101 or 102	Principles of Micro or Macro-Economics	1	ENG352	Control Systems	1
				ENG094	Engineering Seminar IV	0
	Total			Total		
	4			5		

Level	Senior Year					
Semester	Fall			Spring		
	Course Code	Description	Units	Course Code	Description	Units
	Technical Elective I	Intelligent Systems	1	IDS252	Society Ethics and Technology	1
	MEC483	Robotics	1	College Core II	Social Justice/Multidisciplinary Perspectives	1
	ELC495/MEC495	Senior Design Project I	0.5	ELC496/MEC496	Senior Design Project II	0.5
	College Core II	Historical Perspective	1	College Core IV	Social Justice/Multidisciplinary Perspectives	1
	ENG354	Control Systems Laboratory	0.5	Technical Elective II	Electrical or Computer or Mechanical Engineering	1
	ENG099	Senior Professional Seminar	0			
	Total			Total		
	4			4.5		
	Total 36					

Technical Electives-Electrical Engineering			Preq	Computer Engineering			Preq
ELC341	Communication Systems		ELC251, ELC383	ELC451	Computer Architecture		ENG312
ELC383	Electronics II		ELC251	ELC470	Special Topics in ELC (By advisement)		
ELC411	Embedded Systems		ENG312, ELC423	ELC411	Embedded Systems		ENG312; ELC251
ELC423	Digital Signal Processing		ENG312, ELC480	ELC423	Digital Signal Processing		ENG312; ELC321
ELC480	Digital Video Processing and Compression		CSC220, ELC480	ELC480	Digital Video Processing and Compression		CSC220; ELC321
Technical Electives-Mechanical Engineering			Preq	Intelligent Systems			Preq
MEC421	Kinematics and Mechanism		CSC217, ENG212	CSC380	Artificial Intelligence		CSC230, CSC270, MAT127
MEC431	Mechanical Design Analysis II		MEC311	CSC426	Machine Learning		CSC230, CSC270, MAT127
MEC460	Finite Elements in Mechanical Design		MEC311, M	CSC355	Human Computer Interaction		CSC230, CSC270, MAT127
MEC470	Special Topics in Mechanical Engineering		ENG212, EN	ELC435	Artificial Neural Networks		ENG312, ELC321, MAT229

Legend

- Maths and Science Core
- Engineering Science Core
- General Engineering
- Computer Science Core
- Others

