

**Bachelor of Science in Engineering + Robotics
Four-Year Course Plan (2018-19)**

FIRST-YEAR	FALL		SPRING	
	MATH 170: Calculus I (DLM)	4	MATH 175: Calculus II	4
	ENGL 101: Introduction to College Writing	3	UF 100: Intellectual Foundations	3
	CHEM 111/111L: General Chemistry I & Lab	4	PHYS 211/211L: Physics II with Calculus and Lab	5
	ENGR 120: Intro to Engineering (3 credits) or ENGR 130: Intro to Engineering Applications (4 credits) (DLN)	3-4	ME 105 Mechanical Engineering Graphics	3
	Semester Total	14-15	Semester Total	14-15

SOPHOMORE	FALL		SPRING	
	MATH 275: Multivariable and Vector Calculus	4	ENGR 280: Engineering Design I	3
	ENGR 210: Engineering Statics	3	MATH 333: Differential Equations with Matrix Theory	4
	PHYS 212/212L: Physics II with Calculus and Lab (5 credits)*	5	CS 117: C++ for Engineers (3 credits) or CS 121: Intro to CS (4 credits)	3-4
	ENGL 102: College Writing and Research	3	Social Science (E+ Pathway related choice recommended) (DLS)	3
			UF 200: Civic & Ethical Foundations	3
Semester Total	15	Semester Total	16-17	

JUNIOR	FALL		SPRING	
	ECE 210: Introduction to Electrical Circuits I	3	ENGR 380: Engineering Design II (CID)	3
	MATH 360: Engineering Statistics or MATH 360: Probability and Statistics I	3	ME 360/ECE 360: System Modeling and Control	3
	Social Science (E+ Pathway related choice recommended) (DLS)	3	ECE 212/212L: Circuit Analysis and Design and Lab	4
	MSE 245/245L: Introduction to Material Science Engineering	4	ECE 230/230L: Digital Systems and Lab	4
	ENGR 220: Dynamics	3	PHIL 102 Intro to Philosophy or PHIL 103 Moral Problems (DLL)	3
Semester Total	15	Semester Total	17	

SENIOR	FALL		SPRING	
	ECE 330/330L: Microprocessors and Lab	3	ENGR 480: Engineering Design III (FF)	4
	E+ Pathway Elective	3	E+ Pathway Elective	3
	Engineering Elective (see next page)	3	Engineering Elective (see next page)	3
	Engineering Elective (see next page)	3	Engineering Elective (see next page)	3
	Visual and Performing Arts (E+ Pathway related choice) (DLV)	3	E+ Pathway Elective	3
Semester Total	15	Semester Total	16	

TOTAL PROGRAM CREDITS: **120-125**

Please see reverse side for Engineering Elective and E+ Pathway Elective choices

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Robotics includes the engineering core, 6 robotics core courses as **engineering electives**, and 6 courses as a **robotics pathway**.

Concentration areas can be drawn from Mechanical Engineering, Electrical Engineering, and Computer Science. Advising to help students determine their interest area is required.

Recommended Courses:

ENGR 220 Dynamics (3) (pre-requisites: MATH 170 and PHYS 211/211L)

ME 360/ECE 360 System Modeling and Control (3) (pre-requisites: PHYS 212/212L, MATH 333)

ECE 230/230L Digital Systems and Lab (3) + (1) (pre-requisites: CS 121)

ECE 330, 330L Microprocessors and Lab (3) + (1)

ME 271 Introduction to Computation for Engineers (1 cr) (pre-requisites: PHYS 211/211L and CS 117)

ME 360 System Modeling and Control (3)

ME 380 Kinematics and Machine Dynamics (3) (p= ENGR 220, Math 275 & 333, ME 271 + Me major*)

ME 352 Machine Design I (3)

ME 462 Machine Design II (3)

Math 301 Linear Algebra is recommended elective (3) (pre-requisite: Math 175)

Autonomous Robotic Systems (VIP) variable credits 1-2 credits per semester at the 200 or 400 level

Computer Science Focus

Design and Analysis of Algorithms

MATH 189 Discrete Mathematics (4)

CS 121 Computer Science 1 + CS 121L Computer Science 1 Lab (4)

CS 221 Computer Science II (3)

CS 321 Data Structures (3) (P = CS 221 & Math 189)

CS 421 Algorithms (3)