

B.S. Robotics Engineering Degree (Fall 2025)

This is not an official list of degree requirements. Adjustments may be required due to curriculum changes.

First Year

Fall

Course	Prerequisites	Credit
MA 1160 Calculus with Technology I		4
PH 1100 Physics I Lab	MA 1160(C)	1
ENG 1101 Engineering Analysis & Problem Solving	MA 1160(C)	3
CS 1121 Introduction to Programming I		3
UN 1015 Composition		3
Total		14

Spring

Course	Prerequisites	Credit
MA 2160 Calculus with Technology II	MA 1160	4
PH 2100 University Physics I	MA 1160, PH 1100(C)	3
CH 1150 University Chemistry I	MA 1160(C)	3
CH 1151 University Chemistry Lab I		1
ENG 1102 Engineering Modeling & Design	ENG 1101, MA 1160(C)	3
Essential Education: Foundations of the Human World		3
Total		17

Second Year

Fall

Course	Prerequisites	Credit
MA 2321 Elementary Linear Algebra	MA 2160	2
MA 3521 Elementary Differential Equations	MA 2160	2
PH 1200 Physics II Lab	PH 1100	1
PH 2200 University Physics II	MA 2160, PH 2100, PH 1200(C)	3
EE 2112 Electric Circuits & Lab	MA 3521(C)	4
SAT 2711 Linux Fundamentals	CS 1121	3
Essential Education: Activities for Well-being and Success		1
Total		16

Spring

Course	Prerequisites	Credit
MA 3160 Multivariable Calculus with Technology	MA 2160	4
EE 2174 Digital Logic & Lab	CS 1121	4
EE 2180 Electric Energy Systems	EE 2112(C), MA 2321(C)	3
ENG 2120 Statics-Strength of Materials	MA 2160, PH 2100, (ENG 1101 or CS 1121)	4
Essential Education: Activities for Well-being and Success		1
Total		16

Third Year

Fall

Course	Prerequisites	Credit
EE 3160 Signals & Systems	EE 2112, MA 2321, MA 3521	3
EE 3280 Robot Operating Systems	EE 2180, SAT 2711	3
ME 2700 Dynamics	ENG 2120, PH 2100	3
Essential Education: SHAPE		3
Essential Education: Arts & Culture		3
Total		15

Spring

Course	Prerequisites	Credit
EE 3174 Introduction to Microcontrollers & Embedded Systems	EE 2174, CS 1121	4
EE 3261 Control Systems	EE 3160	3
EE 3901 Design Fundamentals	EE 2112, UN 1015	2
ME 4404 Mechanism Synthesis / Dynamic Modeling	ME 2700	3
Essential Education: Communication Intensive		3
Total		15

Fourth Year

Fall

Course	Prerequisites	Credit
EE 3373 Introduction to Programmable Controllers	EE 2112	3
EE 4235 Sensing and Processing in Robotic Applications	EE 2180, ENG 1101	3
RE Approved Elective		3
Essential Education: Experience		3
Essential Education: Activities for Well-being and Success		1
EE 4901 EE Design Project 1	EE 3280, EE 3901, EE 3261(C), EE 3174(C)	2
Total		15

Spring

Course	Prerequisite	Credit
RE Technical Elective (Directed)		4
RE Technical Elective (Remaining)		3
Math & Science Elective		3
Essential Education: Intercultural Competency		3
EE 4910 EE Design Project 2	EE 4901	2
Total		15

Grand Total = 123 Credits

*Prerequisites must be completed before the course. Concurrent prerequisites—identified with a (C)—may be taken before or alongside the course.

For 2025 – 2026

Revised 12/19/2025

1. **Math:** Students are placed into an initial math course based on ACT/SAT math score, the online ALEKS assessment, or a math placement exam score for credit (AP, IB, CLEP). MA1160 (4 credits) or MA1161 (5 credits) satisfy the Calculus 1 requirement.
2. **Essential Education Requirements: 24 total credits.** Required courses are UN1015: *Composition* (3 credits), a Foundations of the Human World course (3 credits), a Communication Intensive course (3 credits), an Arts & Culture course (3 credits), an Intercultural Competency course (3 credits), a SHAPE course (3 credits), an Essential Education Experience course (3 credits), and 3 credits of Activities for Wellbeing and Success courses.
3. **Math and Science Elective: 3 credits.** Choose from BL1010 or higher, CH1160 or higher, EE 3180, MA 2600, MA2710, MA 2720, MA3000 or higher, PH1090, PH1091, PH1600, PH1610, PH2300 or higher. Excluding BL1580, BL1590, BL1710, BL1800, BL3970, BL3990, MA3750, MA3810, MA3811, MA3990, MA4810, MA4820, MA4905, MA4945.
4. **Approved Elective: 3 credits.** Human/machine related topics. Choose from HF2000, HF3850, HU3710, PSY3600, PSY4160 refer to your degree audit report with the engineering design path for list of valid courses.
5. **Directed RE Technical Elective: 4 credits.** Choose one course or one set from: (EE4219 & EE4220), EE4737, EET4373, ME4705.
6. **Remaining RE Technical Elective: e credits.** Choose one course or one set from: (EE4219 & EE4220), EE4262, EE4737, EET4373, ME4705, ME4707.