Robotics Engineering Minor

Flowchart

The flowchart for the minor is shown below.

Semester 2-4 Programming + Linear Algebra	→	Semester 4-5 Intro to Robotics (ENGR 3100)	→	Semesters 5-8 3 Core courses from Table 1 (one must be outside of major academic unit)	→	Semesters 7-9 1 Specialization course from Table 2 + Capstone Design (optional)
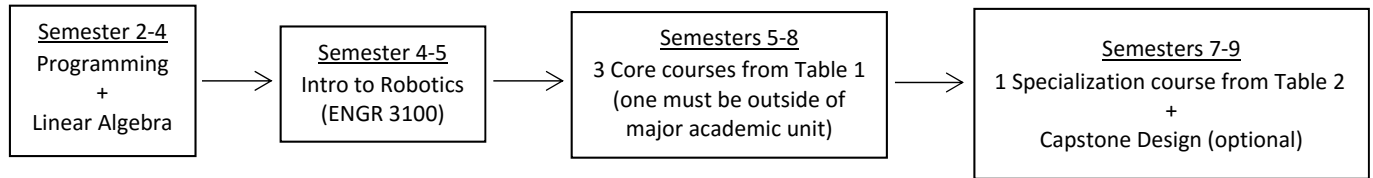
Programming: ME 2543 or IE 2060 or CSC 1253 or CSC 1350. One of these courses is required for each Engineering major, except for BE.

Linear algebra: MATH 2070 or MATH 2085 or MATH 2090. MATH 2090 is required for most engineering majors, except for BE.

Capstone Design: Engineering students from academic units with Capstone Design are strongly encouraged to select a robotics-related project.

Table 1: List of Core Courses

ME 3133 Dynamics, or CE 2460 Dynamics and Vibrations
ME 4183 Theory/Design Mechanical Control Systems, or EE 3530 Intro Control Engineering
ME 4673 Intro Modern Control Theory
ME 4683 Sensors & Actuators
ME 4193 Vehicle Dynamics
EE 3752 Microprocessor Systems
EE 4750 Microprocessor Interfacing Techniques
EE 4780 Intro Computer Vision
EE 4730 3D Graphical and Geometric Modeling
EE 4160 Algorithms and Implementation of DSP
EE 4003 Digital Control
EE 4490 Adjustable Speed Drives
CSC 4444 Artificial Intelligence
CSC 4356/ME 4573 Intro Interactive Computer Graphics
CSC 4243 Interface Design and Technology
CSC 4512 Optimization
CSC 4402 Intro Database Management Systems
IE 4465/BE 4323 Biomechanics for Engineers, or KIN 3514 Biomechanical Basis of Kinesiology
IE 4485 Systems Integration in Manufacturing
IE 4466 Human Computer Interaction
KIN 4571 Neuromotor Control of Human Movement

Table 2: List of Specialization Courses

ENGR 4100 Industrial Robots
ENGR 4200 Autonomous Robotic Vehicles
ENGR 4103 Assistive Robotics