

# ROBOTICS ENGINEERING MAJOR

## Program Tracking Sheet

Effective for students entering AY 2022-2023

Name:	Class Year:
Advisor:	2 <sup>nd</sup> Major:

**NOTES:** Minimum total academic credit = 15 units

Residency Req.: Min. of 8 units must be completed at WPI

### HUMANITIES AND ARTS (2 units)

All 5 HUA courses must be completed before beginning the Inquiry Seminar or Practicum.

<b>Depth Component</b>				
Students must complete at least three thematically-related courses prior to the culminating Inquiry Seminar or Practicum in the same thematic area. At least one of the three courses should be at the 2000-level or above.				
	Course	Term	Grade	Units
1				1/3
2				1/3
3				1/3
4	HU 3900 or HU 3910			1/3
<b>Breadth Component</b>				
Students must take at least one course outside the grouping in which they complete their depth component. To identify breadth, courses are grouped in the following manner.				
i. art/art history, drama/theatre, and music (AR, EN/TH, MU);				
ii. foreign languages (AB, CN, EN, GN, SP);				
iii. literature and writing rhetoric (EN, WR, RH);				
iv. history and international studies (HI, HU, INTL);				
v. philosophy and religion (PY, RE).				
Exception: May take all six courses in a foreign language				
5				1/3
<b>Humanities Elective</b>				
6				1/3

### PHYSICAL EDUCATION (4 PE classes = 1/3 unit)

7				1/12
				1/12
				1/12
				1/12

### SOCIAL SCIENCE (2/3 unit) ECON, ENV, GOV, PSY, SD, SOC, SS, STS, DEV, and ID2050

8				1/3
9				1/3

### THE INTERACTIVE QUALIFYING PROJECT (1 unit)

10				1/3
11				1/3
12				1/3

### FREE ELECTIVES (1 unit)

13				1/3
14				1/3
15				1/3

### MATHEMATICS (7/3 units) Courses with prefix: MA

Must include Differential and Integral Calculus, Differential Equations, Linear Algebra, and Probability

16	MA 1021 (Calc 1)			1/3
17	MA 1022 (Calc 2)			1/3
18	MA 1023 (Calc 3)			1/3
19	MA 1024 (Calc 4)			1/3
20	MA 2051 (Diff Eqs)			1/3
21	MA 2071 (Lin Alg)			1/3
22	MA 2621/2631 (Probability)			1/3

### BASIC SCIENCE (4/3 units)

**PHYSICS** (2/3 unit) Courses with prefix: PH

23	PH 1110/1111 (Mechanics)			1/3
24	PH 1120/1121 (E&M)			1/3

**OTHER SCIENCE** (2/3 unit) Courses with prefix: BB/CH/GE/PH

25				1/3
26				1/3

**ENTREPRENEURSHIP** (1/3 unit)

27	ETR 1100/3633/Other			1/3
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### SOCIAL IMPLICATIONS (1/3\* unit)

At least 1/3 unit of Social Implications in Technology (CS3043, GOV2302, GOV/ID 2314, RBE 3100)

43				1/3
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### ENGINEERING SCIENCE AND DESIGN (6\*\* units)

**ROBOTICS ENGINEERING** (5/3 units)

Must include at least 5/3 units in Robotics Engineering, including RBE 2001, 2002, 3001, 3002 or equivalent. RBE 3100 may not be used to fulfill this requirement.

28	RBE 1001†(Intro Robotics)			1/3
29	RBE 2001 (Unified Robotics 1)			1/3
30	RBE 2002 (Unified Robotics 2)			1/3
31	RBE 3001 (Unified Robotics 3)			1/3
32	RBE 3002 (Unified Robotics 4)			1/3

**COMPUTER SCIENCE** (1 unit)

At least 1 unit in Computer Science, including Object-Oriented Programming and Software Engineering

33	CS 1101/1102/1004 (Intro. Prog.)			1/3
34	CS 2102 (Object Oriented)			1/3
35	CS 3733 (Software Eng)			1/3

**ELECTRICAL AND COMPUTER ENGINEERING** (2/3 unit)

At least 2/3 unit in Electrical and Computer Engineering, including Embedded Systems. ECE 2010 is a recommended course for RBE majors, but not required

36				1/3
37	ECE 2049 (Embedded Sys)			1/3

**ENGINEERING SCIENCE** (2/3 unit) Course with prefix: ES

At least 1/3 unit in Statics and 1/3 unit in Controls

38	ES 2501 (Statics)			1/3
39	ES 3011/ME3703 (Controls)			1/3

**ENGINEERING SCIENCE AND DESIGN ELECTIVES** (1 unit)

At least 2/3 unit must be at the 4000 level or higher.

40				1/3
41				1/3
42				1/3

**MAJOR QUALIFYING PROJECT** (1 unit)

44				1/3
45				1/3
46				1/3

\* If GOV 2302, or GOV/ID 2314 are double-counted as meeting the Social Science Requirement and the Social Implications Requirement, then the Distribution Requirements total 10 units, otherwise the Distribution Requirements total 10 1/3 units.

\*\* Specific courses listed above are given as examples only. Alternatives exist for all requirements, including equivalent courses, independent study/project work, experimental courses and graduate courses.

† Students entering with a strong robotics background should substitute a more advanced RBE course.