

# ROBOTICS ENGINEERING MAJOR

## Program Tracking Sheet

Effective for students entering AY 2020-2021

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.

**Depth Component**  
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

**Breadth Component**  
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

				1/3
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<b>Humanities Elective</b>				
				1/3

<b>PHYSICAL EDUCATION (4 PE classes = 1/3 unit)</b>				
				1/12
7				1/12
				1/12
				1/12

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

				1/3
8				1/3
9				1/3

<b>THE INTERACTIVE QUALIFYING PROJECT (1 unit)</b>				
				1/3
10				1/3
11				1/3
12				1/3

<b>FREE ELECTIVES (1 unit)</b>				
				1/3
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)

<b>PHYSICS (2/3 unit)</b> Courses with prefix: PH				
	23 PH 1110/1111 (Mechanics)			1/3
	24 PH 1120/1121 (E&M)			1/3

<b>OTHER SCIENCE (2/3 unit)</b> Courses with prefix: BB/CH/GE/PH				
	25			1/3
	26			1/3

<b>ENTREPRENEURSHIP (1/3 unit)</b>				
	27 ETR 1100/3633/Other			1/3

### 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 (Intro Pg Des)			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

<b>MAJOR QUALIFYING PROJECT (1 unit)</b>				
	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.