This resource is for ENGRUD students who entered the UW in AUT21 or later.

Industrial Engineering Graduation Requirements

University of Washington
https://ise.washington.edu

ENGRUD Requirement Sheet – Key:
◆ = Placement Requirements;
★ = Pick ***one*** *to satisfy placement requirements*
Placement: July 1 at the end of the first year

◆ **E-FIG: ENGR 101 and GEN ST 199 (2cr)**

Mathematics (24cr)

◆ **MATH 124, 125, 126 - Calc w/ Analytical Geom. I-III (15cr)**

MATH 207 - Intro to Differential Equations (3cr)
[pr: MATH 125]

MATH 208 - Matrix Algebra with Applications (3cr)
[pr: MATH 126]

IND E 315 - Probability & Statistics for Engineers (3cr)
[pr: MATH 136, MATH 207, or AMATH 351]

Sciences (25cr)

◆ **CHEM 142 - General Chemistry (5cr)**

CHEM 152 - General Chemistry (5cr)
[pr: CHEM 142]

◆ **PHYS 121 - Mechanics (5cr)**
[pr: MATH 125 or MATH 134]

PHYS 122 - Electromagnetism (5cr)
[pr: MATH 125 or MATH 134; PHY 121]

PHYS 123 - Waves (5cr)
[pr: MATH 126 or MATH 134; PHYS 122]

Engineering General Education Requirements (38cr)

Written and Oral Communications:

◆ **English Composition (5cr)**

ENGR 231 - Intro to Technical Communication (3cr)

Areas of Knowledge:

Visual, Literary & Performing Arts - VLPA (10cr)

Individuals & Society - I&S (10cr)

VLPA or I&S (10cr)

Diversity - DIV (3cr) - (may overlap with VLPA/I&S)

Engineering Fundamentals (28cr)

A A 210 - Engineering Statics (4cr)
[pr: MATH 126; PHYS 121]

★ ***CSE 142 - Computer Programming I (4cr)***

CEE 220 - Intro to Mechanics of Materials (4cr)
[pr: AA 210]

E E 215 - Fundamentals of Electrical Engineering (4cr)
[pr: MATH 136 or MATH 126 and MATH 207 or AMATH 351, either of which may be taken concurrently; PHYS 122]

IND E 250 - Fundamentals of Engineering Economy (4cr)

M E 230 - Kinematics and Dynamics (4cr)
[pr: AA 210]

MSE 170 - Fundamentals of Material Science (4cr)
[pr: CHEM 142, CHEM 143, or CHEM 145]

Departmental Core (37cr)

IND E 310 - Linear and Network Programming (4cr)

IND E 311 - Stochastic Models and Decision Analysis (4cr)

IND E 316 - Design of Experiments (4cr)

IND E 321 - Statistical Quality Control (4cr)

IND E 337 - Intro to Manufacturing Systems (4cr)

IND E 338 - Simulation (4cr)

IND E 351 - Human Factors in Design (4cr)

IND E 491 - Professional Practice Seminar (1cr)

IND E 494 - Design in the Manufacturing Firm (4cr)

IND E 495 - Industrial Engineering Design (4cr)

Production Requirement (4cr)

IND E 430 - Manufacturing Scheduling and Inventory
OR
INDE 439 - Plant Layout and Material Handling

Department Electives (20-24cr)

Complete one option below. See department for list of approved courses.

a. Standard Option
b. Data Science Option

Free Electives

Additional coursework in any subject area not used elsewhere in degree.

Total credits required for graduation: 180cr

Honors or accelerated sequences of chemistry, math and physics will satisfy the placement requirements. AMATH 351/352/353 may be alternatives to MATH 207/208/209, work with the department to confirm.

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Industrial Engineering
Sample Curriculum
University of Washington
https://ise.washington.edu

Industrial & Systems Engineering Advising
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Seattle, WA 98195-2650
Phone: (206) 543-5041
Email: ieadvise@u.washington.edu

This is a sample four-year plan for ENGRUD students that prepares them to be able to request placement at the end of the first year. It is intended to provide a framework for ENGRUD students to reference as they create their own individual academic plan.

Courses required to request placement for ENGRUD students: **ENGR 101, MATH 124, MATH 125, MATH 126; CHEM 142, PHYS 121, English Composition; ENGRUD students who are interested in ISE must take one of the one of the following: AMATH 301, CSE 142, or CSE 160.**

First Year

Autumn Quarter	cr	Winter Quarter	cr	Spring Quarter	cr
◆ **MATH 124 - Calc w Analytic Geom I**	5	◆ **MATH 125 - Calc w Analytic Geom II**	**5**	◆ **MATH 126 - Calc w Analytic Geom III**	**5**
◆ **CHEM 142 - General Chemistry**	5	CHEM 152 - General Chemistry	**5**	◆ **PHYS 121 - Mechanics**	**5**
VLPA / I&S	4	◆ **English Composition**	**5**	★ ***CSE 142 - Computer Programming I***	4
◆ **E-FIG: ENGR 101 & GEN ST 199**	2				
Qtr. Total:	**16**	Qtr. Total:	**15**	Qtr. Total:	**14**

Second Year

Autumn Quarter	cr	Winter Quarter	cr	Spring Quarter	Cr
PHYS 122 - Electromagnetism	5	PHYS 123 - Waves	5	IND E 250 - Engineering Ecomomy	4
A A 210 - Engineering Statics	4	MATH 208 - Matrix Algebra with Apps	5	M E 230 - Kinematics & Dynamics	4
MATH 207 - Intro to Differential Equations	3	CEE 220 - Intro to Mechanics of Materials	4	MSE 170 - Materials Science	4
ENGR 231 - Intro to Technical Comm	3			IND E 315 - Prob & Stats for Engineers	3
Qtr. Total:	**15**	Qtr. Total:	**14**	Qtr. Total:	**15**

Third Year

Autumn Quarter	cr	Winter Quarter	cr	Spring Quarter	cr
IND E 337 - Intro to Manufacturing Sys	4	IND E 311 - Stochastic Models & Decision Analysis	4	E E 215 - Fund of Electrical Engineering	4
IND E 310 - Linear & Network Prog	4	IND E 316 - Design of Experiments	4	IND E 321 - Stat Qual Control	4
IND E Option/Tech Elective course	4	IND E 338 - Simulation	4	IND E 351 - Human Factors	4
VLPA / I&S	4	VLPA / I&S	4	IND E Option/Tech Elective course	4
Qtr. Total:	**16**	Qtr. Total:	**16**	Qtr. Total:	**16**

Fourth Year

Autumn Quarter	cr	Winter Quarter	cr	Spring Quarter	cr
IND E 430 or 439	4	IND E 494 - Design in the Manufacturing Firm	4	IND E 495 - Industrial Engineering Design	4
IND E 491 Seminar	1	IND E Option/Tech Elective course	4	IND E Option/Tech Elective course	4
IND E Option/Tech Elective course	4	VLPA / I&S	5	VLPA / I&S	5
VLPA / I&S	5			VLPA / I&S / DIV	3
Qtr. Total:	**14**	Qtr. Total:	**13**	Qtr. Total:	**16**

◆ **= Placement Requirement**
★ **=** *Pick one to satisfy placement requirements*

Honors or accelerated sequences of chemistry, math and physics will satisfy the placement requirements. AMATH 351/352/353 may be alternatives to MATH 207/208/209, work with the department to confirm.

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