

This resource is for ENGRUD students who entered the UW in AUT20 or later.

IndE

**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 307 - Intro to Differential Equations (3cr)

[pr: MATH 125]

MATH 308 - Matrix Algebra with Applications (3cr)

[pr: MATH 126]

IND E 315 - Probability & Statistics for Engineers (3cr)

[pr: MATH 136, MATH 307, 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 either MATH 307 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 (24cr)

IND E 316 - Design of Experiments (4cr)

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

IND E 410 - Linear & Network Programming (4cr)

IND E 411 - Stochastic Models & Decision Analysis (4cr)

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

IND E 495 - Industrial Engineering Design (4cr)

Technical Electives (37cr)

Complete a minimum of 37 credits of Technical Electives including at least one course from each of the following five categories:

- Operations Research: IND E 412 OR IND E 424

- Statistics: IND E 321 OR IND E 426

- Production/Operations: IND E 430 OR IND E 439

- Design: IND E 351 OR IND E 455

- General Engineering: A A 260 OR CSE 143

See department list of approved courses.

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 307/308/309, work with the department to confirm.

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IndE

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

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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

<u>Autumn Quarter</u>	<u>cr</u>	<u>Winter Quarter</u>	<u>cr</u>	<u>Spring Quarter</u>	<u>cr</u>
◆ 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

<u>Autumn Quarter</u>	<u>cr</u>	<u>Winter Quarter</u>	<u>cr</u>	<u>Spring Quarter</u>	<u>Cr</u>
PHYS 122 - Electromagnetism	5	PHYS 123 - Waves	5	IND E 250 - Engineering Economy	4
A A 210 - Engineering Statics	4	MATH 308 - Matrix Algebra with Apps	5	M E 230 - Kinematics & Dynamics	4
MATH 307 - 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

<u>Autumn Quarter</u>	<u>cr</u>	<u>Winter Quarter</u>	<u>cr</u>	<u>Spring Quarter</u>	<u>cr</u>
IND E 337 - Intro to Manufacturing Sys	4	IND E 411 - Stochastic Models & Decision Analysis	4	E E 215 - Fund of Electrical Engineering	4
IND E 410 - Linear & Network Prog	4	IND E 316 - Design of Experiments	4	IND E Technical Elective	4
IND E Technical Elective	4	IND E Technical Elective	4	IND E Technical Elective	4
VLPA / I&S	4	VLPA / I&S	4	IND E Technical Elective	4
Qtr. Total:	16	Qtr. Total:	16	Qtr. Total:	16

Fourth Year

<u>Autumn Quarter</u>	<u>cr</u>	<u>Winter Quarter</u>	<u>cr</u>	<u>Spring Quarter</u>	<u>cr</u>
IND E Technical Elective	4	IND E 494 - Design in the Manufacturing Firm	4	IND E 495 - Industrial Engineering Design	4
IND E Technical Elective	3	IND E Technical Elective	4	IND E Technical Elective	3
IND E Technical Elective	3	VLPA / I&S	5	VLPA / I&S	5
VLPA / I&S	5			VLPA / I&S / DIV	3
Qtr. Total:	15	Qtr. Total:	13	Qtr. Total:	15

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