



**Aeronautics & Astronautics
Graduation Requirements**
University of Washington
<https://aa.washington.edu>

ENGRUD Requirement Sheet – Key

- ◆ = Placement Requirements;
- ★ = *Pick one to satisfy placement requirement*

Placement Periods

Placement 1 = July 1 at end of first year
Placement 2 = January 15 of second year

Mathematics (24cr)	
◆ MATH 124, 125, 126 - Calculus with Analytical Geometry I, II, III (15cr)	<input type="checkbox"/>
MATH 307 - Introduction to Differential Equations (3cr) [pr: MATH 125]	<input type="checkbox"/>
MATH 308 - Matrix Algebra with Applications (3cr) [pr: MATH 126]	<input type="checkbox"/>
MATH 324 - Advanced Multi-Variable Calculus (3cr) [pr: MATH 126]	<input type="checkbox"/>
Sciences (25cr)	
★ CHEM 142 - General Chemistry (5cr)	<input type="checkbox"/>
CHEM 152 - General Chemistry (5cr) [Pr: CHEM 142] <u>OR</u> Other Natural World (5cr)	<input type="checkbox"/>
◆ PHYS 121 - Mechanics (5cr) [either pr: MATH 124 or MATH 134]	<input type="checkbox"/>
◆ PHYS 122 - Electromagnetism (5cr) [either pr: MATH 125 or MATH 134; PHYS 121]	<input type="checkbox"/>
★ PHYS 123 - Waves (5cr) [pr: MATH 126; PHYS 122]	<input type="checkbox"/>
Engineering General Education Requirements (29cr)	
Written and Oral Communication:	
◆ English Composition (5cr)	<input type="checkbox"/>
Areas of Knowledge:	
Visual, Literary & Performing Arts - VLPA (10cr)	<input type="checkbox"/>
Individuals & Society - I&S (10cr)	<input type="checkbox"/>
VLPA or I&S (4cr)	<input type="checkbox"/>
Diversity - DIV (3cr) - (may overlap with VLPA/I&S)	<input type="checkbox"/>
Engineering Fundamentals (20cr)	
AA 210 - Engineering Statics (4cr) [pr: MATH 126; PHYS 121]	<input type="checkbox"/>
CEE 220 - Introduction to Mechanics of Materials (4cr) [pr: AA 210]	<input type="checkbox"/>
ME 230 - Kinematics and Dynamics (4cr) [pr: AA 210]	<input type="checkbox"/>
AA 260 - Thermodynamics (4cr) [pr: CHEM 142; MATH 126; PHYS 121]	<input type="checkbox"/>
AMATH 301 - Beg. Scientific Computing (4cr) [pr: either MATH 125, Q SCI 292, or MATH 135]	<input type="checkbox"/>

Departmental Core (54cr)	
AA 301 - Compressible Aerodynamics (4cr)	<input type="checkbox"/>
AA 302 - Incompressible Aerodynamics (4cr)	<input type="checkbox"/>
AA 310 - Orbital and Space Flight Mechanics (4cr)	<input type="checkbox"/>
AA 311 - Atmospheric Flight Mechanics (4cr)	<input type="checkbox"/>
AA 312 - Structural Vibrations (4cr)	<input type="checkbox"/>
AA 320 - Aerospace Instrumentation (3cr)	<input type="checkbox"/>
AA 321 - Aerospace Laboratory I (3cr)	<input type="checkbox"/>
AA 322 - Aerospace Laboratory II (3cr)	<input type="checkbox"/>
AA 331 - Aerospace Structures I (4cr)	<input type="checkbox"/>
AA 332 - Aerospace Structures II (4cr)	<input type="checkbox"/>
AA 395 - Undergraduate Seminar (1cr)	<input type="checkbox"/>
AA 410 & 411 (4cr, 4cr) - Aircraft Design I & II <u>OR</u> AA 420 & 421 (4cr, 4cr) - Spacecraft and Space Systems Design I & II	<input type="checkbox"/>
AA 447 - Control in Aerospace Systems (4cr)	<input type="checkbox"/>
AA 460 - Propulsion (4cr)	<input type="checkbox"/>
Senior Technical Electives (15cr)	
Any 400-level AA courses not used elsewhere in degree.	<input type="checkbox"/>
Free Electives (13cr)	
Additional coursework in any subject area not used elsewhere in degree.	<input type="checkbox"/>
Total credits required for graduation: 180cr	

*Honors or accelerated sequences of math and chemistry can satisfy some of the above requirements, see department website for specifics.
AMATH 351/352/353 are alternatives to Math 307/308/309.*



This is a sample four-year plan for ENGRUD students that qualifies them for Placement Two (P2). 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: **MATH 124, MATH 125, MATH 126; PHYS 121, PHYS 122, and either PHYS 123 OR CHEM 142; 5 credits of English Composition.**

	Autumn Quarter	Cr	Winter Quarter	Cr	Spring Quarter	Cr
Freshman	◆ MATH 124 - Calculus I	5	◆ MATH 125 - Calculus II	5	◆ MATH 126 - Calculus III	5
	★ CHEM 142 - General Chemistry	5	CHEM 152 - General Chemistry OR Other Natural World	5	◆ PHYS 121 - Mechanics	5
	VLPA/I&S	5	◆ English Composition	5	VLPA/I&S	5
	E-FIG: ENGR 101 & GEN ST 199	2				
	Qtr. Total:	17	Qtr. Total:	15	Qtr. Total:	15
Sophomore	Autumn Quarter	Cr	Winter Quarter	Cr	Spring Quarter	Cr
	MATH 307 - Intro to Differential Equations	3	MATH 308 - Matrix Algebra	3	AA 260 - Thermodynamics	4
	◆ PHYS 122 - Electromagnetism	5	★ PHYS 123 - Waves	5	CEE 220 - Intro to Mechanics of Materials	4
	AA 210 - Engineering Statics	4	ME 230 - Kinematics & Dynamics	4	MATH 324 - Multivariable Calculus	3
	VLPA/I&S	2	VLPA/I&S	4	AMATH 301 - Beg. Scientific Computing	3
Qtr. Total:	14	Qtr. Total:	16	Qtr. Total:	14	
Junior	Autumn Quarter	Cr	Winter Quarter	Cr	Spring Quarter	Cr
	AA 310 - Orbital & Space Flight Mechanics	4	AA 302 - Incompressible Aerodynamics	4	AA 301 - Compressible Aerodynamics	4
	AA 311 - Atmospheric Flight Mechanics	4	AA 312 - Structural Vibrations	4	AA 322 - Aerospace Laboratory II	3
	AA 320 - Aerospace Instrumentation	3	AA 321 - Aerospace Laboratory I	3	AA 332 - Aerospace Structures II	4
	AA 395 - Undergraduate Seminar	1	AA 331 - Aerospace Structures I	4	AA 447 - Control in Aerospace	4
VLPA/I&S/DIV	3					
Qtr. Total:	15	Qtr. Total:	15	Qtr. Total:	15	
Senior	Autumn Quarter	Cr	Winter Quarter	Cr	Spring Quarter	Cr
	AA 360 – Propulsion	4	AA 410 or 420 - Capstone Design I	4	AA 411 or 421 - Capstone Design II	4
	AA Technical Elective	3	AA Technical Elective	3	AA Technical Elective	3
	AA Technical Elective	3	AA Technical Elective	3	VLPA/I&S	5
	Free Elective	5	Free Elective	5	Free Elective	3
Qtr. Total:	15	Qtr. Total:	15	Qtr. Total:	15	

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