

Energy Systems Engineering Curriculum 2017-18

University of Wyoming

FRESHMAN YEAR					
Fall Semester			Spring Semester		
MATH 2200	<i>Calculus I</i>	4	MATH 2205	<i>Calculus II</i>	4
CHEM 1020	<i>General Chemistry I</i>	4	LIFE 1010	<i>Biology I</i>	4
ENGL 1010	<i>Composition and Rhetoric (COM1)</i>	3	ES 2110	<i>Statics</i>	3
	<i>Freshman Seminar (F)</i>	3	COJO 2010	<i>Public Speaking (COM2)</i>	3
	<i>US & Wyo Constitutions (V)</i>	3		<i>Human Culture (H)</i>	3
TOTAL HOURS		17	TOTAL HOURS		17
SOPHOMORE YEAR					
Fall Semester			Spring Semester		
MATH 2210	<i>Calculus III</i>	4	MATH 2310	<i>Applied Differential Equations I</i>	3
PHYS 1220	<i>Engineering Physics II</i>	4	ATSC 2100	<i>Global Warming</i>	3
ES 1060	<i>Intro to Eng Problem Solving</i>	3	Math/Science Elective ¹		3
ES 2120	<i>Dynamics</i>	3	ES 2310	<i>Thermodynamics I</i>	3
ES 2210	<i>Electric Circuit Analysis</i>	3	ES 2330	<i>Fluid Dynamics</i>	3
			ES 2410	<i>Mechanics of Materials</i>	3
TOTAL HOURS		17	TOTAL HOURS		18
JUNIOR YEAR					
Fall Semester			Spring Semester		
ESE 3005	<i>Engineering Experimentation</i>	3	ESE 3160	<i>Thermal/Fluid Science Lab</i>	3
ESE 3020	<i>System Dynamics</i>	3	ESE 3360	<i>Fund. of Transport Phenomena</i>	3
ESE 3040	<i>Thermodynamics II</i>	3		<i>Technical Elective³</i>	3
ME 3060	<i>Numerical Methods</i>	3		<i>Technical Elective³</i>	3
	<i>ESE Elective²</i>	3		<i>Law Elective⁴</i>	3
TOTAL HOURS		15	TOTAL HOURS		15
SENIOR YEAR					
Fall Semester			Spring Semester		
ESE 4060	<i>Energy Systems Design I (COM3)</i>	3	ESE 4070	<i>Energy Systems Design II</i>	3
	<i>Technical Elective³</i>	3		<i>Technical Elective³</i>	3
	<i>Technical Elective³</i>	3		<i>ESE Elective²</i>	3
ENR 3000	<i>ENR Problem Solving (H)</i>	3	ENR 4900	<i>ENR Assessment Practice (COM3)</i>	3
	<i>Human Culture (H)</i>	3		<i>Business Elective¹</i>	3
TOTAL HOURS		15	TOTAL HOURS		15
TOTAL HOURS TO BS ESE DEGREE: 129					

Notes:

- i) Before enrolling in any upper division ESE or ME course, students must complete the ME Success Curriculum (3.0 GPA in the three calculus and seven ES courses).
These 10 courses are shown in italics.
- ii) A minimum GPA of 2.0 is required in ME and ESE courses.
- iii) Color Code: **Mathematics**, **Sciences**, **Engineering**, **ESE-specific courses**, and **University Studies Requirements**
- iv) 48 upper division hours are required, so ESE, business, and technical electives should be chosen appropriately.

¹ Math/Science and Business Electives must be chosen from a Department approved list.

² Two ESE Electives to be chosen from: ECON 1300 Oil: Business, Culture, and Power; ENR 2000 Environment and Society; ENR 4890 Applied GIS; POLS 4051 Environmental Politics; POLS 4350 Sustainable Development and Global Policy; GEOL 3500 Global Change - A Geologic Perspective; GEOL 3650 Energy - A Geologic Perspective; PETE 4000 Environment, Tech, and Society; and ENR 4890 Economics of Natural Resource Scarcity

³ Five Technical Electives to be chosen from: PETE 2050 Intro to Petroleum Engineering; GEOL 4190 Petroleum Geology; CE 3400 Intro to Environmental Engineering; CE 4430 Environmental Engineering Chemistry; ME 3450 Properties of Materials; ME 4020 Mechatronics; ME 4340 Gas Turbine Engines; ME 4470 Wind and Ocean Energy Engineering; ME 4460 Solar and Geothermal Engineering; ESE 4330 Internal Combustion Engines; ESE 4360 Nuclear Engineering; and ESE 4380 Steam Plant Engineering

⁴ Law Elective to be chosen from: ENR 4890 Environmental Law, ENR 4890 ENR Law and Policy, or ENR 4890 Wildlife Law and Energy Development