

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