

# Energy Resource Management & Development, BS

## Renewable Energy Concentration



### University of Wyoming, 2016-17

#### Freshman Fall Semester

		Hrs	Min Grade	Notes	
USP First-Year Seminar		3	C	FY	
USP US & Wyoming Constitutions		3	C	V; recommend ECON 1200 (Economics, Law, and Government).	
ENGL	1010	College Composition and Rhetoric	3	C	C1
ERS	1000	Energy and Society	3	C	PN
MATH	2200	Calculus I * †	4	C	Q
Credit hours subtotal:		<b>16</b>			

#### Freshman Spring Semester

		Hrs	Min Grade	Notes	
ES	1060	Engineering Problem Solving †	3	C	
ES	2110	Statics †	3	C	
ERS	2500	Communication Across Topics in Energy	3	C	C2
MATH	2205	Calculus II †	4	C	
PHYS	1210	Engineering Physics I	4	C	PN
Credit hours subtotal:		<b>17</b>			

#### Sophomore Fall Semester

		Hrs	Min Grade	Notes	
ACCT	1010	Principles of Accounting I	3	C	
CHEM	1020	General Chemistry I	4	C	PN; can substitute CHEM 1050 (Advanced General Chemistry I).
ECON 1	1020	Principles of Microeconomics	3	C	H; cross listed with AGECE 1020.
ES	2120	Dynamics †	3	C	
MATH	2210	Calculus III †	4	C	
Credit hours subtotal:		<b>17</b>			

#### Sophomore Spring Semester

		Hrs	Min Grade	Notes	
CHEM	1030	General Chemistry II	4	C	Can substitute CHEM 1060 (Advanced General Chemistry II).
ES	2310	Thermodynamics I †	3	C	
ES	2330	Fluid Dynamics †	3	C	
MATH	2310	Applied Differential Equations I	3	C	
STAT	2050	Fundamentals of Statistics	4	C	Can substitute STAT 2070 (Intro Statistics for the Social Sciences).
Credit hours subtotal:		<b>17</b>			

This is a guide for course work in the major; actual course sequence may vary by student. Please refer to the online student degree evaluation. • Not all courses are offered every semester and some electives may have prerequisites. Students should review the course descriptions in the *University Catalog* and consult with their academic advisor to plan accordingly.

#### University of Wyoming requirements:

Students must have a minimum cumulative GPA of 2.0 to graduate. • Students must complete 42 hours of upper division coursework, 30 of which must be from the University of Wyoming. • Courses must be taken for a letter grade unless offered only for S/U. • H and PN courses must be taken outside of the major subject, but can be cross-listed with the major.

#### Energy Resource Management and Development Program Notes:

This degree is a collaborative effort between the School of Energy Resources and the Colleges of Arts and Sciences, Agriculture and Natural Resources, Business, Engineering and Applied Science, and Law, as well as with the Haub School of Environment and Natural Resources. • Academic plans and course schedules may need to be altered if Math Placement scores require Math 0900, 0921, 0925, 1400, 1405, or 1450. • Students must earn a letter grade of C or better in each course and a cumulative gpa of 2.0 or better to graduate. • Students are strongly encouraged to complete an industry internship (a minimum gpa of 3.0 is typically required). Opportunities are also available for undergraduate research, a study abroad experience, or a summer field trip. Please consult with an academic advisor. • Students majoring in Energy Resource Management and Development can earn a double major by completing courses required for the Environment and Natural Resources program. Or students looking to create a focus for their coursework can add a minor to the program. Please consult with an academic advisor about these options.

† Students must earn a minimum 3.0 grade point average in these courses.

\* Requires MATH ACT  $\geq$  27, MATH SAT  $\geq$  600, Math Placement Exam  $\geq$  5, or  $\geq$  C in MATH 1405 or 1450. (University Standard)

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Junior Fall Semester				Hrs	Min Grade	Notes
		USP Human Culture		3	C	H
ES	2210	Electric Circuit Analysis †		3	C	
ES	2410	Mechanics of Materials †		3	C	
FIN	3250	Corporate Finance		3	C	
SOIL	3130	Environmental Quality		3	C	Offered fall semester.
Credit hours subtotal:				<b>15</b>		

Junior Spring Semester				Hrs	Min Grade	Notes
ERS	4050	Solar Energy Conversion		3	C	Cross listed with CHEM 4050; offered spring semester every other year
ME	3360	Fundamentals of Transport Phenomena		3	C	Cross listed with ARE/ESE 3360.
MGT	3210	Management and Organization		3	C	
		Upper Division Economics Elective **		3	C	
		Technical Elective ***		3	C	
Credit hours subtotal:				<b>15</b>		

Junior Summer Semester				Hrs	Min Grade	Notes
		Practicum ****		3	S	
Credit hours subtotal:				<b>3</b>		

Senior Fall Semester				Hrs	Min Grade	Notes
ENR	4500	Risk Analysis		3	C	
ENR	4501	Risk Analysis Lab		1	C	Concurrent enrollment in ENR 4500 required.
ENR	4750	ENR Law and Policy		3	C	Permission of instructor required; offered fall semester.
		Negotiation Elective *****		3	C	
		Elective		6	C	Consult with an academic advisor for courses from an approved list.
Credit hours subtotal:				<b>16</b>		

Senior Spring Semester				Hrs	Min Grade	Notes
DSCI	4260	Project Management		3	C	
ERS	4900	Energy Resource Management Capstone		3	C	C3; offered spring semester.
ME	4470	Wind and Ocean Energy Engineering		3	C	Cross listed with ESE 4470; offered spring semester.
		ESE/ME elective *****		3	C	
Credit hours subtotal:				<b>12</b>		

**TOTAL CREDIT HOURS: 128**

### Energy Resource Management and Development Program Notes con't:

\*\* **Upper Division Economics Elective.** Select one (1) from the following:

AGEC 3750	Natural Resource Planning and Economics (3 hrs)	AGEC 4720	Water Resource Economics (3 hrs)
AGEC 4600	Community Economic Analysis (3 hrs)	ECON 4420	Seminar: Economics for ENR (2-4 hrs)
AGEC 4660	Community & Economic Development (3 hrs)		

\*\*\* **Technical Elective.** Select one (1) from the following:

ESE/ME 3040	Thermodynamics II (3 hrs)	ME 3010	Intermediate Mechanics of Materials (3 hrs)
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\*\*\*\* **Practicum.** Complete any combination of courses below to equal three (3) credit hours:

ENR 3700	Wyoming Conservation Corps Practicum (1-2 hrs)	ERS 4965	Undergraduate Research (1-3 hrs)
ENR 4970	ENR Internship (1-6 hrs)	ERS 4970	Internship (1-3 hrs)
ERS 4960	Energy Field Studies (2 hrs)	ERS 4975	Global Experience in Energy (2-4 hrs)

\*\*\*\*\* **Negotiation Elective.** Select one (1) from the following:

AGEC/ENR 4550	Negotiation Analysis (3 hrs) (offered fall semester)
AGEC/ENR 4450	Negotiation (3 hrs) (offered spring semester)

\*\*\*\*\* **ESE/ME Elective.** Select one (1) from the following:

ME 4360	Introduction to Nuclear Energy (3 hrs)	ME 4460	Solar and Geothermal Engineering (3 hrs)
ME 4380	Steam Plant Engineering I (3 hrs)		