

“W” Number: \_\_\_\_\_  
 Student Name: \_\_\_\_\_  
 Advisor Name: \_\_\_\_\_

Catalog: 2021-2022 University of Wyoming Catalog  
 Program: Energy Resource Management and  
 Development, B.S.

## Energy Resource Management and Development, B.S.

One of the most important challenges of the 21st century will be to develop and manage energy resources in a sustainable manner. Projections show energy consumption worldwide will increase nearly 50 percent by 2035. And half of the leadership in the energy industries is expected to retire in the next five to ten years.

The future of energy will be characterized by increasing knowledge, relentless change, and technological innovation. As the global energy industry increases in complexity, demand will dramatically grow for professionals with a multidisciplinary, entrepreneurial skillset. Future leaders must understand complex technology within the context of business, legal, social, and public policy in order to create comprehensive and sustainable solutions.

The Energy Resource Management and Development (ERM&D) B.S. program is designed to fill this need through a combination of rigorous courses, real-world internships, and undergraduate research experiences. The degree program requires uniquely interdisciplinary coursework from classes throughout campus. This broad-based education will support graduates to have the skills necessary in an ever-evolving job market. The curriculum balances depth of learning with the breadth of understanding to train graduates for sustained competitive success in the energy workforce at the frontiers of knowledge and for self-directed, life-long learning. Students learn to focus on continuous improvement, constant assessment, and the importance of a sense of urgency and consideration of profit motive in the energy industry.

Our program emphasizes career planning and provides one-on-one guidance and assistance to ensure optimal workforce placement. Students are strongly encouraged to complete an industry internship (the minimum GPA requirement is typically 3.000). Opportunities are also available for undergraduate research, a study abroad experience, or a summer field trip. Multiple events during the year connect students to energy industry professionals.

### Student Learning Outcomes

The Energy Resource Management and Development Program is designed to meet the demands of the energy workforce and enhance social literacy related to complex energy issues. Competency-based learning that integrates problem-solving, critical analysis of uncertain and complex issues, and constant improvement in performance are overarching components of our undergraduate program.

1. Gain appreciation and understanding of fundamental concepts of energy systems.
2. Acquire a foundational understanding of business fundamentals relative to energy companies, including organizational structure, management, entrepreneurship, and international commerce.
3. Understand the legal, cultural, scientific, and technological dimensions of energy resources.
4. Demonstrate the business and professional skills necessary to engage in meaningful conversation and dialogue across written, oral and digital platforms.
5. Exhibit critical thinking and problem solving related to earth, energy, and environmental problems.
6. Appreciate the demands and responsibilities of engaged citizenship and decision-making.
7. Prepare for a lifetime of ethical service to the profession.
8. Apply concepts and skills to real-world problems to gain practical understanding and experience.

### Required Academic Performance

The student must earn a letter grade of C or better in each course and a cumulative GPA of 2.000 or better.

### Concentrations

The Energy Resource Management and Development program offers two concentrations and students must declare at least one concentration. The two concentrations are Energy and Environmental Systems and Professional Land Management. The suggested course sequences for both concentrations are shown below.

#### Energy and Environmental Systems Concentration

Environmental scientists collect data samples for air, soil, water and other materials to identify environmental impacts for studies and surveys. These samples help to resolve environmental threats, develop plans and provide guidance to ensure quality regulation and manage natural resources.

Energy production is dependent upon the sustained stewardship of air, land, and water resources. Environmental scientists, consultants, and reclamation planners use their knowledge of our natural resources to protect the environment during energy development.

Suggested Course Sequence

#### Freshman Year: Fall

Course Name	Credits:	Term Taken	Grade	Gen Ed
ENGL1010 - College Composition and Rhetoric (C1) USP Code [WA< >COM1]	Credits: 3			
ENR1000 - Energy and Society (PN) USP Code [O< >PN]	Credits: 3			
<b>OR</b>				
ERS1000 - Energy and Society USP Code [O< >PN]	Credits: 3			
First-Year Seminar (FYS) Credits / Units: 3				
MATH2200 - Calculus I (Q) USP Code [QB< >Q]	Credits: 4			
<b>OR</b>				
MATH2350 - Business Calculus USP Code [QB< >Q]	Credits: 4			
ECON1300 - Oil: Business, Culture, and Power (H) USP Code [CS,G< >(none)]	Credits: 3			
<b>OR</b>				
ERS1300 - Oil: Business, Culture, and Power USP Code [CS,G< >H]	Credits: 3			
<b>Total Hours 16</b>				
<b>Freshman Year: Spring</b>				
Course Name	Credits:	Term Taken	Grade	Gen Ed
AGEC1020 - Principles of Microeconomics (H) USP Code [CS< >H]	Credits: 3			
<b>OR</b>				
ECON1020 - Principles of Microeconomics (H) USP Code [CS< >H]	Credits: 3			
US & Wyoming Constitution (V) Credits / Units: 3 Communication 2 Elective (C2) (See footnote 1) Credits / Units: 3				
LIFE1010 - General Biology (PN) USP Code [SB< >PN]	Credits: 4			
General Elective (See footnote 2) Credits / Units: 3				
<b>Total Hours 16</b>				
<b>Sophomore Year: Fall</b>				
Course Name	Credits:	Term Taken	Grade	Gen Ed
LIFE2023 - Biology of Plants and Fungi	Credits: 4			
REWM2000 - Principles of Rangeland Management	Credits: 3			
Chemistry Elective (See footnote 3) Credits / Units: 4				
ACCT2010 - Principles of Accounting I	Credits: 3			
<b>Total Hours 14</b>				
<b>Sophomore Year: Spring</b>				
Course Name	Credits:	Term Taken	Grade	Gen Ed
SOIL2010 - Introduction to Soil Science USP Code [SE< >(none)]	Credits: 4			
LIFE3400 - General Ecology	Credits: 3			
GIST1200 - Geospatial Foundations	Credits: 3			
STAT2070 - Introductory Statistics for the Social Sciences (QB;Q) USP Code [QB< >Q]	Credits: 4			
<b>OR</b>				
STAT2050 - Fundamentals of Statistics (QB;Q) USP Code [QB< >Q]	Credits: 4			
<b>Total Hours 14</b>				

**Junior Year: Fall**

Course Name	Credits:	Term Taken	Grade	Gen Ed
REWM2400 - Range Ecosystems and Plants	Credits: 4			
REWM3100 - Principles of Wildland Water Quality	Credits: 3			
GIST2310 - Intro to Geographic Information Systems	Credits: 4			
ERS4120 - Federal Public Land Law	Credits: 3			

**Total Hours 14****Junior Year: Spring**

Course Name	Credits:	Term Taken	Grade	Gen Ed
DSCI4260 - Project Management	Credits: 3			
Economics Elective (See footnote 4) Credits / Units: 3				
FIN3250 - Corporate Finance	Credits: 3			
ERS3010 - Air Quality Management	Credits: 3			
General Elective (See footnote 2) Credits / Units: 3				

**Total Hours 15****Senior Year: Fall**

Course Name	Credits:	Term Taken	Grade	Gen Ed
REWM4200 - Reclamation of Drastically Disturbed Lands	Credits: 3			
Data Analysis Elective (See footnote 5) Credits / Units: 3				
Negotiation Elective (See footnote 6) Credits / Units: 3				
ENR4750 - ENR Law and Policy	Credits: 3			
General Elective (See footnote 2) Credits / Units: 3				

**Total Hours 15****Senior Year: Spring**

Course Name	Credits:	Term Taken	Grade	Gen Ed
REWM4700 - Wildland Watershed Management	Credits: 3			
<b>OR</b>				
REWM4710 - Watershed Water Quality Management	Credits: 3			
Communication 3 Elective (See footnote 7) Credits / Units: 3				
Upper-division General Elective (See footnote 2) Credits / Units: 4				
REWM4580 - Rangeland Restoration Ecology	Credits: 3			
Technical Elective (See footnote 8) Credits / Units: 3				

**Total Hours 16****Total Credit Hours 120**

1 COM 2 Elective - Select one: COJO 2010, ECON 2400, ENGL 2005, ENR 2000, ENR 3300, ERS 2500, HP 2020, UWYO 1600

2 General Elective- Select four (one must be upper-division): ERS 1650, 4960, 4965, 4970, 4975, 4985, 4990; ECON 1010; ENR 1200, 2300, 3450, 3700, 3900, 4040, 4600, 4890, 4960, 4970; 4985 DSCI 3210; GEOG 3150, 3450, 3480, 3550, 4040, 4111, 4210, 4211; FIN 3310, 3520; LIFE 3410; GEOL 1600, 1650, 3600, 3650, 4210; GIST 2160; IMGT 1400, 2400; LS 2100; MGT 3210, 3410, 3420, 4340, 4350, 4360; MKT 3210, 4600; PLNT 1150; PHIL 2420; POLS 4051, 4052; REWM 4210, 4285, 4330, 4530, 4700, 4750, 4830, 4850; SOIL 4100, 4105, 4120, 4130, 4140, 4150, 4160

3 Chemistry Elective - Select one: CHEM 1000 Fall only, CHEM 1020 Fall, Spring or Summer, CHEM 1050. All courses listed here meet USP:PN

4 Economics Elective - Select one: ECON/ERS 3400 (preferred); AGECE 3750, 4600, 4700, 4720; ECON 4420

5 Data Analysis Elective - Select one: BOT 4211; ENR 4500, 4525; ES 1060; GEOG 4211; GEOL 2120, 4250, 4525; GIST 4211; IMGT 1400; STAT 3050; ZOO 4400

6 Negotiation Elective - Select one: AGECE 4450, 4550; ENR 4450, 4550

7 COM 3 Elective - Select one: ENR concurrent majors take ENR 4900; all other students select from ENGL 4010, 4025, 4075

8 Technical Elective - Select one: Any 3000/4000 ENR, GEOG, SOIL, REWM, or RNEW class except ENR 4750

**Professional Land Management Concentration**

Students of the Professional Land Management concentration develop a complex and nuanced understanding of the U.S. legal system relative to energy development, including administrative law, legislation and regulation, and the common law of property and contracts. This concentration is a particularly effective option for students who are interested in the legal profession and/or attending law school.

Suggested Course Sequence

**Freshman Year: Fall**

Course Name	Credits:	Term Taken	Grade	Gen Ed
ERS1300 - Oil: Business, Culture, and Power (H) USP Code [CS,G< >H]	Credits: 3			
<b>OR</b>				
ECON1300 - Oil: Business, Culture, and Power (H) USP Code [CS,G< >(none)]	Credits: 3			
First-Year Seminar (FYS) Credits / Units: 3				
ERS1000 - Energy and Society (PN) USP Code [O< >PN]	Credits: 3			
<b>OR</b>				
ENR1000 - Energy and Society (PN) USP Code [O< >PN]	Credits: 3			
MATH2200 - Calculus I USP Code [QB< >Q]	Credits: 4			
<b>OR</b>				
MATH2350 - Business Calculus (Q) USP Code [QB< >Q]	Credits: 4			
ENGL1010 - College Composition and Rhetoric (C1) USP Code [WA< >COM1]	Credits: 3			

**Total Hours 16****Freshman Year: Spring**

Course Name	Credits:	Term Taken	Grade	Gen Ed
AGEC1020 - Principles of Microeconomics (H) USP Code [CS< >H]	Credits: 3			
<b>OR</b>				
ECON1020 - Principles of Microeconomics (H) USP Code [CS< >H]	Credits: 3			
Communication 2 Elective (See footnote 1) Credits / Units: 3				
MGT1040 - Legal Environment of Business	Credits: 3			
MATH2205 - Calculus II USP Code [(none)< >Q]	Credits: 4			
<b>(OR)</b>				
MATH2355 - Mathematical Applications for Business	Credits: 4			
US & Wyoming Constitution (V) Credits / Units: 3				

**Total Hours 16****Sophomore Year: Fall**

Course Name	Credits:	Term Taken	Grade	Gen Ed
ACCT2010 - Principles of Accounting I	Credits: 3			
GEOL1100 - Physical Geology (PN) USP Code [SE< >PN]	Credits: 4			
Ethics Elective (See footnote 2) Credits / Units: 3				
MGT3210 - Management and Organization	Credits: 3			
General Elective (See footnote 3) Credits / Units: 3				

**Total Hours 16**

<b>Sophomore Year: Spring</b>				
<b>Course Name</b>	<b>Credits:</b>	<b>Term Taken</b>	<b>Grade</b>	<b>Gen Ed</b>
ACCT2020 - Principles of Accounting II	Credits: 3			
ERS2010 - Introduction to Land Management	Credits: 2			
GIST1200 - Geospatial Foundations	Credits: 3			
STAT2070 - Introductory Statistics for the Social Sciences (QB,Q) <b>USP Code [QB&lt; &gt;Q]</b>	Credits: 4			
<b>OR</b>				
STAT2050 - Fundamentals of Statistics (QB,Q) <b>USP Code [QB&lt; &gt;Q]</b>	Credits: 4			
General Elective (See footnote 3) Credits / Units: 3				
<b>Total Hours 15</b>				
<b>Junior Year: Fall</b>				
<b>Course Name</b>	<b>Credits:</b>	<b>Term Taken</b>	<b>Grade</b>	<b>Gen Ed</b>
GIST2310 - Intro to Geographic Information Systems	Credits: 4			
General Elective (See footnote 3) (6 credits) Upper-division General Elective (3 credits) Credits / Units: 9				
<b>Total Hours 13</b>				
<b>Junior Year: Spring</b>				
<b>Course Name</b>	<b>Credits:</b>	<b>Term Taken</b>	<b>Grade</b>	<b>Gen Ed</b>
ERS4010 - Exploration Geoscience	Credits: 3			
ERS4110 - Law of Contracts	Credits: 3			
DSCI4260 - Project Management	Credits: 3			
Economics Elective (See footnote 4) Credits / Units: 3 Data Analysis Elective (See footnote 5) Credits / Units: 3				
<b>Total Hours 15</b>				
<b>Senior Year: Fall</b>				
<b>Course Name</b>	<b>Credits:</b>	<b>Term Taken</b>	<b>Grade</b>	<b>Gen Ed</b>
POLS4051 - Environmental Politics	Credits: 3			
<b>OR</b>				
ENR4750 - ENR Law and Policy	Credits: 3			
<b>OR</b>				
POLS4052 - Federal Land Politics	Credits: 3			
ERS4100 - Property I	Credits: 3			
ERS4120 - Federal Public Land Law	Credits: 3			
ERS4130 - Oil and Gas Law	Credits: 3			
Negotiation Elective (See footnote 6) Credits / Units: 3				
<b>Total Hours 15</b>				
<b>Senior Year: Spring</b>				
<b>Course Name</b>	<b>Credits:</b>	<b>Term Taken</b>	<b>Grade</b>	<b>Gen Ed</b>
ERS4105 - Property II	Credits: 3			
ERS4135 - Advanced Oil and Gas Law (C3) <b>USP Code [{none}&lt; &gt;COM3]</b>	Credits: 3			
ERS4985 - Seminar	Credits: 1-3			
Upper-Division General Elective (See footnote 3) Credits / Units: 6				
<b>Total Hours 14</b>				
<b>Total Credit Hours 120</b>				
1 COM2 Elective - Select one: COJO 2010; ECON 2400; ENGL 2005; ENR 2000; ENR 3300; HP 2020; UWYO 1600				

2 Ethics Elective - Select one: ERS 2000; MGT 3110; PHIL/ENR 2330

3 General Elective- Select seven (three must be upper-division): ERS 1650, 4960, 4965, 4970, 4975, 4985, 4990; ECON 1010; ENR 1200, 2300, 3450, 3700, 3900, 4040, 4600, 4890, 4960, 4970; 4985 DSCI 3210; GEOG 3150, 3450, 3480, 3550, 4040, 4111, 4210, 4211; FIN 3310, 3520; LIFE 3410; GEOL 1600, 1650, 3600, 3650, 4210; GIST 2160; IMGT 1400, 2400; LS 2100; MGT 3210, 3410, 3420, 4340, 4350, 4360; MKT 3210, 4600; PLNT 1150; PHIL 2420; POLS 4051, 4052; REWM 4210, 4285, 4330, 4530, 4700, 4750, 4830, 4850; SOIL 4100, 4105, 4120, 4130, 4140, 4150, 4160

4 Economics Elective - Select one: ECON/ERS 3400 (preferred); AGECE 3750, 4600, 4700, 4720; ECON 4420

5 Data Analysis Elective- Select one: BOT 4211;ENR 4500, 4525; ES 1060; GEOG 4211; GEOL 2120, 4250, 4525; GIST 4211; IMGT 1400; STAT 3050; ZOO 4400

6 Negotiation Elective - Select one: AGECE 4450, 4550; ENR 4450, 4550

**Notes:**