

## Environmental and Natural Resources Engineering

<https://ag.purdue.edu/oap/Pages/major.aspx>

Credits	Course number	Course Title	Prerequisites	Credits	Course number	Course Title	Prerequisites
<b>Fall 1st Year</b>				<b>Spring 1st Year</b>			
4	CHM 11500	General Chemistry	pre/co: calculus	4	CHM 11600	General Chemistry	CHM 11500
4	ENGL 10600	First-Year Composition		3	COM 11400	Fundamentals of Speech	
2	ENGR 13100	Transforming Ideas to Innovation I		2	ENGR 13200	Transforming Ideas to Innovation II	ENGR 13100
4	MA 16500	Plane Analytic Geometry and Calculus I	ALEKS 85+	4	MA 16600	Plane Analytic Geometry and Calculus II	MA 16500
3	-----	UCC Approved Humanities Selective		4	PHYS 17200	Modern Mechanics	pre/co:MA 16500
<b>17</b>				<b>17</b>			

<b>Fall 2nd Year</b>				<b>Spring 2nd Year</b>			
3	ABE 20500	Computation for Engineering Systems	ENGR 13200, pre/co:PHYS 17200	3	ABE 21000	Thermodynamics Principles of Engineering and Biological Systems	CHM 11500, PHYS 17200
1	ABE 29000	Sophmore Seminar		4	MA 26200	Linear Algebra and Differential Equations	MA 26100
4	MA 26100	Multivariate Calculus	MA 16600	3	ME 27400	Basic Mechanics II	ME 27000, pre/co: MA 26200
3	ME 27000	Basic Mechanics I	PHYS 17200, pre/co: MA 26100, ENGR 13200	3	NUCL 27300	Mechanics of Materials	ME 27000
3	PHYS 24100	Electricity and Optics	PHYS 17200	4	-----	Biological Science Selective	
3	-----	Economics Selective					
<b>17</b>				<b>17</b>			

<b>Fall 3rd Year</b>				<b>Spring 3rd Year</b>			
3	ABE 30500	Physical Properties of Biological Materials	ABE 20500 pre/co: AGRY 25500, (CE 34000 and CE 34300) or ME 30900	3	ABE 31400	Design of Electronic Systems	MA 26200
4	ABE 32500	Soil and Water Resource Engineering		3	ABE 33000	Design of Machine Components	NUCL 27300, pre/co: ABE 20500
3	AGRY 25500	Soil Science	CHM 11600	3	-----	ENRE Technical Selective	
4	(CE 34000 and CE 34300) or ME 30900	Hydraulics and Elementary Hydraulics Lab or Fluid Mechanics	ME 27400	4	-----	Biological Science Selective	
3	-----	Humanities or Social Science Selective		3	-----	Agricultural Selective	
<b>17</b>				<b>16</b>			

<b>Fall 4th Year</b>				<b>Spring 4th Year</b>			
3	ABE 45000	Finite Element Method in Design and Optimization	MA 26200, NUCL 27300	3	ABE 48600	Agricultural Engineering Design	ABE 48400
1	ABE 48400	Project Planning and Management	ABE 32500, ABE 33000	3	-----	Engineering Technical Selective	
1	ABE 49000	Professional Practice in Agricultural and Biological Engineering	ABE 29000	2	-----	Humanities or Social Selective	
3	-----	ENRE Technical Selective		3	-----	Humanities or Social Selective (30000+)	
3	-----	Engineering Technical Selective		2	-----	Elective	
3	-----	Written or Oral Communication Selective					
<b>14</b>				<b>13</b>			

128 semester credits required for Bachelor of Science degree.  
2.0 GPA required for Bachelor of Science degree.

The highlighted course is considered critical; timely progress toward the degree depends upon steady progress through each course in the plan of study, but this course, in particular, should be completed by the semester indicated.

**Consultation with an advisor may result in an altered plan customized for an individual student.**

Official and complete prerequisite lists are in the course catalog; the incomplete listing presented here regards this program and course sequencing.

# Environmental and Natural Resource Engineering

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128 credits required for graduation

Credits	Course number	Course Title
<b>Departmental/Program Major Courses (126 credits)</b>		
<b>Required Major Courses (28 credits)</b>		
_____ 3	ABE 20500	Computation for Engineering Systems
_____ 3	ABE 21000	Thermodynamics Principles of Engineering and Biological Systems
_____ 1	ABE 29000	Sophomore Seminar
_____ 3	ABE 30500	Physical Properties of Biological Materials
_____ 3	ABE 31400	Design of Electronic systems
_____ 4	ABE 32500	Soil and Water Resource Engineering
_____ 3	ABE 33000	Design of Machine Components
_____ 3	ABE 45000	Finite Element Method in Design and Optimization
_____ 1	ABE 48400	Project Planning and Management
_____ 3	ABE 48600	Agricultural Engineering Design
_____ 1	ABE 49000	Professional Practice in Agricultural and Biological Engineering
<b><u>Other Departmental /Program Course Requirements (98 credits) (See Advising Resources)</u></b>		
_____ 2	ENGR 13100	Transforming Ideas to Innovation I
_____ 2	ENGR 13200	Transforming Ideas to Innovation II
_____ 4	CHM 11500	General Chemistry (satisfies Science #1 for core)
_____ 4	CHM 11600	General Chemistry (satisfies Science #2 for core)
_____ 4	MA 16500	Plane Analytic Geometry and Calculus I (satisfies Quantitative Reasoning for core)
_____ 4	MA 16600	Plane Analytic Geometry and Calculus II
_____ 4	MA 26100	Multivariate Calculus
_____ 4	MA 26200	Linear Algebra and Differential Equations
_____ 4	PHYS 17200	Modern Mechanics
_____ 3	PHYS 24100	Electricity and Optics
_____ 4	(CE 34000 and CE 34300) or ME 30900	(Hydraulics and Elementary Hydraulics Lab) or Fluid Mechanics
_____ 3	ME 27000	Basic Mechanics I
_____ 3	ME 27400	Basic Mechanics II
_____ 3	NUCL 27300	Mechanics of Materials
_____ 3	-----	Engineering Technical Selective
_____ 3	-----	Engineering Technical Selective
_____ 3	-----	ENRE Technical Selective
_____ 3	-----	ENRE Technical Selective
_____ 3	AGRY 25500	Soil Science
_____ 3	-----	Agricultural Selective
_____ 4	-----	<a href="#">Biological Science Selective</a>
_____ 4	-----	<a href="#">Biological Science Selective</a>
_____ 4	ENGL 10600	First-Year Composition (satisfies Written Communication for core) (satisfies Information Literacy Selective for core)
_____ 3	COM 11400	Fundamentals of Speech Communication (satisfies Oral Communication for core)
_____ 3	-----	<a href="#">Written and Oral Communication Selective</a>
_____ 3	-----	<a href="#">Economics Selective (satisfies Human Culture Behavioral/Social Science for core)</a>
_____ 3	-----	<a href="#">UCC Humanities Selective (satisfies Human Cultures Humanities for core)</a>
_____ 2	-----	<a href="#">Humanities or Social Science Selective</a>
_____ 3	-----	<a href="#">Humanities or Social Science Selective</a>
_____ 3	-----	<a href="#">Humanities or Social Science Selective (30000+ level)</a>
<b>Electives (2 credits)</b>		
_____ 2	-----	Elective

**University Core Requirements:**

Human Cultures Humanities: _____	Science, Technology, and Society: _____
Human Cultures Behavioral/Social Science: _____	Written Communication: _____
Information Literacy: _____	Oral Communication: _____
Science #1: _____	Quantitative Reasoning: _____
Science #2: _____	

**College of Agriculture & University Level Requirements:**

2.0 GPA required for Bachelor of Science degree.

32 Upper division credits taken from Purdue

6 credits International Understanding: \_\_\_\_\_

3 credits Multicultural Awareness: \_\_\_\_\_

3 credits of Hum or Social Sciences 30000+ level: \_\_\_\_\_

9 credits of Hum and/or Social Sciences outside the College of Agriculture: \_\_\_\_\_

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