



Energy Engineering BS

IUPUI Indianapolis School of Engr & Tech (ENGR)

[Career Options](#) | [Financial Aid Options](#)

Student's Catalog Year: Fall 2019–Summer 2022

Total Degree Map Credits: 128

Description: This broad field of engineering deals with energy efficiency, energy services, facility management, environmental compliance and alternative energy technologies. Energy engineers creatively apply their knowledge of science (physics and chemistry), engineering (electrical and mechanical) and economics to confront the global challenges of energy supply and demand.

C Critical Courses: Courses that students should complete by specific points during their degree or certificate program.

M Milestones: Conditions or activities that students should complete by specific points during their degree or certificate program.

Completing a critical course or milestone by the associated term is considered crucial to on-time graduation.

Year One (33 credits)

Fall Term	Minimum Grade	Credits	Spring Term	Minimum Grade	Credits
First Year Seminar - ENGR 12500	C-	1	MATH 16600 - Analytic Geometry and Calculus II C	C	4
Required Semester of Completion: Year 1, Fall			Critical Course Course Details: Also meet General Education Analytical Reasoning (Math) Required Semester of Completion: Year 1, Spring Course Notes: MATH-I 166: P: MATH 16500 with a grade of C- or better.		
MATH 16500 - Analytic Geometry and Calculus I C	C-	4	MATH 17100 - Multidimensional Mathematics C	C-	3
Critical Course Course Details: Also meets General Education Analytical Reasoning (Math) Required Semester of Completion: Year 1, Fall Course Notes: MATH-I 165: P: MATH 15400 or MATH 15900 with a C or better OR ALEKS placement score of 76 or better.			Critical Course Required Semester of Completion: Year 1, Spring Course Notes: MATH-I 171: P: MATH 15400 or MATH 15900 with a C or better OR ALEKS placement score of 68 or better.		
ENGR 19600 - Introduction to Engineering C	C-	3	PHYS 15200 - Mechanics C	C-	4
Critical Course Required Semester of Completion: Year 1, Fall Course Notes: ENGR- 19600: C: MATH 15400 or MATH 15900			Critical Course Course Details: Also meets General Education Life & Physical Science Competency Required Semester of Completion: Year 1, Spring Course Notes: PHYS-I 152: C: MATH 16600		
CHEM-C 105 - Chemical Science I	C-	3			

Course Details: Also meets General Education Life & Physical Science Competency Required Semester of Completion: Year 1, Fall Course Notes: CHEM-C 105: C: MATH 15300 AND Placement into CHEM-C 105		
COMM-R 110 - Fundamentals of Speech Communication	C-	3
Course Details: Also meets General Education Core Communication - Speaking & Listening Competency Required Semester of Completion: Year 2, Spring		
ENG-W 131 - Reading, Rhetoric, and Inquiry 1	C-	3
Course Details: Also meets General Education Core Communication - Writing Competency Required Semester of Completion: Year 2, Spring		
Total		17

ENGR 19700 - Introduction to Programming Concepts	C-	2
Critical Course Required Semester of Completion: Year 1, Spring Course Notes: ENGR- 19700: C: MATH 16500		
General Education Cultural Understanding Competency		3
Required Semester of Completion: Year 4, Spring		
Total		16

Year Two (34 credits)

Fall Term	Minimum Grade	Credits	⌵
EEN 22001 - Fundamentals of Energy Materials	C	3	⌴
Critical Course Course Details: This course is offered in the FALL semester only. Required Semester of Completion: Year 2, Fall Course Notes: EEN- 22001: C: ME 20000 and EEN 22501 AND P: CHEM-C 105			
EEN 22501 - Energy Engineering Lab I	C	1	⌴
Critical Course Course Details: This course is offered in the FALL semester only. Required Semester of Completion: Year 2, Fall Course Notes: EEN- 22501: C: EEN 22000 AND ENGR 29700			
ENGR 29700 - Computer Tools for Engineering	C	1	⌴
Critical Course Required Semester of Completion: Year 2, Fall Course Notes: ENGR- 29700: P: ENGR 19700			
MATH 26100 - Multivariate Calculus	C	4	⌴

Spring Term	Minimum Grade	Credits	⌵
EEN 24000 - Basic Mechanics	C	4	⌴
Critical Course Course Details: This course is offered in the SPRING semester only. Required Semester of Completion: Year 2, Spring Course Notes: EEN- 24000: C: MATH 26600 AND MATH 26100 AND P: PHYS 15200			
EEN 25001 - Energy Engineering Lab II	C	1	⌴
Critical Course Required Semester of Completion: Year 2, Spring Course Notes: EEN- 25001: C: EEN 26200			
EEN 26000 - Sustainable Energy	C	3	⌴
Critical Course Course Details: This course is offered in the SPRING semester only. Required Semester of Completion: Year 2, Spring Course Notes: EEN- 26000: P: CHEM-C 105 AND C: ME 20000 Recommended C: PHYS 25100			
EEN 26201 - Design, Ethics and Entrepreneurship	C	2	⌴

Critical Course Required Semester of Completion: Year 2, Fall Course Notes: MATH-I 261: P: MATH 16600 and MATH 17100 with grades of C- or better.			
ME 20000 - Thermodynamics	C-	3	^
Critical Course Required Semester of Completion: Year 2, Fall Course Notes: ME- 20000: P: PHYS 15200 AND C: MATH 26100, EEN 22501, CHEM-C 105			
PHYS 25100 - Heat, Electricity, and Optics	C	5	^
Critical Course Course Details: Also meets General Education Life & Physical Science Competency Required Semester of Completion: Year 2, Fall Course Notes: PHYS-I 251: P: PHYS 15200 AND C: MATH 26100			
Total		17	

Critical Course Required Semester of Completion: Year 2, Spring Course Notes: EEN- 26201: P: ENGR 19600 C: COMM-R 110, ENGR 29700, EEN 24000, ENG-W 131, and EEN 25001			
ECE 20400 - Introduction to Electrical and Electronic Circuits	C-	4	^
Critical Course Required Semester of Completion: Year 2, Spring Course Notes: ECE- 20400: C: PHYS 25100			
MATH 26600 - Differential Equations	C-	3	^
Critical Course Required Semester of Completion: Year 2, Spring Course Notes: MATH-I 266: P: MATH 16600 and MATH 17100 with grades of C- or better.			
Total		17	

Year Three (31 credits)

Fall Term	Minimum Grade	Credits	^
EEN 31000 - Fluid Mechanics		3	^
Required Semester of Completion: Year 3, Fall Course Notes: EEN- 31000: P: EEN 24000, MATH 26600, AND ME 20000 AND C: EEN 32501			
EEN 32501 - Energy Engineering Lab III		1	^
Required Semester of Completion: Year 3, Fall Course Notes: EEN- 32501: C: EEN 31000, ME 27200			
EEN 33001 - Modeling and Measurement of Dynamic Systems		3	^
Course Details: This course is offered in the FALL semester only. Required Semester of Completion: Year 3, Fall Course Notes: EEN- 33001: P: ECE 20400 AND MATH 26600 C: ENGR 29700 AND EEN 24000			
ECE 49500 - Fundamentals of Electrical Energy Engineering		3	^

Spring Term	Minimum Grade	Credits	^
EEN 34500 - Renewable Energy Systems & Design		3	^
Course Details: This course is offered in the SPRING semester only. Required Semester of Completion: Year 3, Spring Course Notes: EEN- 34500: P: EEN 26000			
EEN 35001 - Energy Engineering Lab IV		1	^
Required Semester of Completion: Year 3, Spring Course Notes: EEN- 35001: C: ME 31400			
ME 31401 - Heat and Mass Transfer		3	^
Required Semester of Completion: Year 3, Spring Course Notes: ME- 31401: P: EEN 31000 AND C: EEN 35001			
STAT Elective		3	^
Course Details: Students can choose from department approved STAT Elective Required Semester of Completion: Year 4, Spring			
Technical Elective		2	^

<p>Course Details: Not all sections of ECE 49500, which is a variable topic course, will satisfy this require. Only the Fundamentals of Electrical Energy Engineering course will satisfy this requirement. This section of ECE 29500 is offered in the FALL semester only. Required Semester of Completion: Year 3, Fall Course Notes: ECE- 49500: P: ECE 20400</p>		
ME 27200 - Mechanics of Materials	3	^
<p>Required Semester of Completion: Year 3, Fall Course Notes: ME- 27200: P: EEN 24000</p>		
ME 32700 - Engineering Economics	3	^
<p>Required Semester of Completion: Year 3, Fall Course Notes: ME- 32700: Can take ECON-E 201 instead</p>		
Total		16

<p>Course Details: Students can choose from the department approved Technical Electives Required Semester of Completion: Year 4, Spring</p>		
General Education Arts & Humanities Competency	3	^
<p>Required Semester of Completion: Year 4, Spring</p>		
Total		15

Year Four (30 credits)

Fall Term	Minimum Grade	Credits	v
ECE 32100 - Electromechanical Motion Devices		3	^
<p>Required Semester of Completion: Year 4, Fall Course Notes: ECE- 32100: P: ECE 49500 (Fund. Of Electrical Energy Engineering)</p>			
EEN 42501 - Energy Engineering Lab V		1	^
<p>Required Semester of Completion: Year 4, Fall Course Notes: EEN- 42501: C: ME 48200</p>			
EEN 44500 - Compressible Flow and Renewable Kinetic Energy		3	^
<p>Course Details: This course is offered in the FALL semester only. Required Semester of Completion: Year 4, Fall Course Notes: EEN- 44500: P: EEN 31000</p>			
ME 48200 - Control Systems Analysis & Design		3	^
<p>Required Semester of Completion: Year 4, Fall Course Notes: ME- 48200: P: EEN 33001 AND C: EEN 42501</p>			

Spring Term	Minimum Grade	Credits	v
EEN 46200 - Capstone Design		3	^
<p>Required Semester of Completion: Year 4, Spring Course Notes: EEN- 46200: C: ME 48200 AND EEN 44500</p>			
EEN Elective		3	^
<p>Course Details: Students can choose from the department approved Energy Electives Required Semester of Completion: Year 4, Spring</p>			
EEN Elective		3	^
<p>Course Details: Students can choose from department approved Engery Elective Required Semester of Completion: Year 4, Spring</p>			
EEN Elective		3	^
<p>Course Details: Students can choose from department approved Engery Elective Required Semester of Completion: Year 4, Spring</p>			
General Education Arts & Humanities or Social Science Competency		3	^
<p>Required Semester of Completion: Year 4, Spring</p>			

TCM 36000 - Communication in Engineering Practice	2	^
Required Semester of Completion: Year 4, Spring Course Notes: TCM- 36000: P: ENG-W 131, COMM- R 110, and Junior Standing in Engineering		
EEN Elective	3	^
Course Details: Students can choose from department approved Engery Elective Required Semester of Completion: Year 4, Spring		
Notify School of Intent to Graduate M		^
Milestone Details: Please contact your school to determine appropriate steps necessary to apply for graduation. Required Semester of Completion: Year 4, Fall		
		Total 15

Total 15

Degree Map Link:

<https://sisjee.iu.edu/sisigps-prd/web/igps/dm/public/maps/view?mapId=1e2cce30-eb73-4d20-9e07-5d41f90d60e5>

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Achieving minimum grades for individual courses may not result in meeting cumulative GPA requirements for admission to programs or for graduation. Verify requirements with your academic advisor or your Academic Advisement Report (AAR).

Completing 30 credit hours each calendar year is required for full state financial aid eligibility. Be sure to complete your FAFSA before March 10 each year. If you follow your map and find a course unavailable, you may be eligible to take that course for free in a future semester.

[More information about the free course guarantee.](#)