

Engineering Dual Degree Requirements

Energy Engineering & Chemistry

University Core Curriculum

Common Core Requirements			Credits
FYS	101	First Year Seminar	3
FYS	102	First Year Seminar	3
GHS	201-209	Global and Historical Studies	3
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General Core Requirements

General Core Requirements			Credits
TI	Text and Ideas		3
PCA	Perspectives in the Creative Arts		3
SW	The Social World (SW 220-EC) ¹		3
AR	<i>Analytical Reasoning (exempt)</i>		3
NW	<i>The Natural World (exempt)</i>		5
PWB	Physical Well-Being		1
Core Credits			22(30)

Additional Core Requirements

BCR	Butler Cultural Requirement		8 events
ICR	Indianapolis Community Requirement		1 course
SAC	Speaking Across the Curriculum		1 course
WAC	Writing Across the Curriculum		1 course

Liberal Arts and Science Requirements

Liberal Arts and Science Requirements			Credits
Foreign Language (min 6 cr 200 level or above)			6-14
Spanish, French, German, Chinese, Latin			
Credits			28-36

Common Engineering

Mathematics			Credits
MA	106	Calculus & Analytical Geometry 1 ⁺	4
MA	107	Calculus & Analytical Geometry 2	4
MA	208	Calculus & Analytical Geometry 3	4
MA	215	Linear Algebra	3
MA	334	Differential Equations	3

Science

Science			Credits
CH	105	<i>General Chemistry 1</i>	-
CH	106	<i>General Chemistry 2</i>	-
PH	201	Introduction to Analytical Physics 1 ⁺	5
PH	202	Introduction to Analytical Physics 2 ⁺	5

Engineering

Engineering			Credits
DD	190	Elementary Engineering Design	3
DD	297	MATLAB	1
CS	142	Intro to Computer Science & Prog	3

Other

Other			Credits
COM	101	Rhetoric and the American Demo	3
TCM	250	Career Planning for Engineers	1
TCM	360	Comm in Engineering Practice (WAC/SAC)	2
ENGR	200	Engineering Internship	1
Credits			42

Chemistry

Chemistry			Credits
CH	105	General Chemistry 1 [†]	5
CH	106	General Chemistry 2 [†]	5
CH	351	Organic Chemistry 1	5
CH	352	Organic Chemistry 2	5
Additional Chemistry Courses ⁱ			12
CH	332	Inorganic Chemistry	
CH	431	Advanced Inorganic Chemistry	
CH	432	Synthesis and Characterization	
CH	321	Analytical Chemistry 1	
CH	422	Analytical Chemistry 2	
CH	424	Instrumental Analysis Laboratory	
CH	361	Biochemistry 1: Bio-Organic Chemistry	
CH	462	Biochemistry IIA: Central Metabolism	
CH	463	Biochemistry Laboratory 1	
CH	471	Physical Chemistry 1 (Quantum Mechanics)	
CH	472	Physical Chemistry 2 (Thermo & Kinetics)	
CH	473	Physical Chemistry Lab	
Credits			32

Energy Engineering

Energy Engineering			Credits
ECON	201	<i>Microeconomics</i> ¹	-
PH	351	Analog Electronics (WAC)	4
MA	359	Probability and Statistics	3
ME	200	Thermodynamics	3
ME	272	Mechanics of Materials	3
ME	314	Heat & Mass Transfer	3
ME	482	Control Systems	3
ECE	321	Electromechanical Motion Devices	3
ECE	495	Fundamentals of Electrical Energy	3
EEN	220	Fund of Electrochem Mat & Energy Engr	3
EEN	225	Energy Engineering Lab I	1
EEN	240	Basic Engineering Mechanics	4
EEN	250	Energy Engineering Lab II	1
EEN	260	Sustainable Energy	3
EEN	262	Engr Design, Ethics, & Entrepreneurship	2
EEN	310	Fluid Mechanics	3
EEN	325	Energy Engineering Lab III	1
EEN	330	Dynamic Sys Modeling & Measurements	3
EEN	345	Renewable Energy Systems	3
EEN	350	Energy Engineering Lab IV	1
EEN	425	Energy Engineering Lab V	1
EEN	445	Compressible Flow & Renewable KE	3
EEN	462	Capstone Design	3
EEN Electives			12
Tech Elective			2
Credits			71

173 - 181 Total Credits

¹ used as equivalents for degree requirements

⁺ also required for Chemistry major

[†] may take CH 107 Advanced General Chemistry for 6 cr, must make up 4 addtl cr in Chemistry electives

ⁱ must include two of the four areas of Chemistry- Analytical, Biological, Inorganic, Physical