Engineering Dual Degree Requirements

Energy Engineering & Physics

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
GHS	201-209	Global and Historical Studies	3

General Core Requirements		Credits
TI	Text and Ideas	3
PCA	Perspectives in the Creative Arts	3
SW	The Social World (SW 220-EC)[3]	3
AR	*Analytical Reasoning (exempt)*	*3*
NW	*The Natural World (exempt)*	*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	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			Credits
CH	105	General Chemistry 1	5
CH	106	General Chemistry 2	5
PH	*201*	*Introduction to Analytical Physics 1*	-
PH	*202*	*Introduction to Analytical Physics 2*	-

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

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

Physics			Credits
PH	201	Introduction to Analytical Physics 1	5
PH	202	Introduction to Analytical Physics 2	5
PH	301	Modern Physics	3
PH	303	Electromagnetic Waves and Optics	3
PH	311	Expermental Modern Physics	3
PH	*321*	*Intermediate Classical Mechanics* [1]	-
PH	*325*	*Thermodynamics & Statistical Physics* [2]	-
PH	331	Electromagnetic Theory I (WAC)	4
PH	421	Quantum Theory I	4
PH	495	Senior Seminar	1
*Physics Elective (*credits used toward 4 cr req)*			-
AS	*301*	*Modern Astronomical Techniques*	
AS	*311*	*Astrophysics I*	
PH	*315*	*Mathematical Methods for Physics*	
PH	*351*	*Analog Electronics I*	
PH	*422*	*Quantum Theory II*	
PH	*427*	*General Relativity and Gravity*	
PH	*461*	*Computational Physics*	
PH	*480*	*Special Topics*	
		Credits	28

Energy Engineering			Credits
ECON	*201*	*Microeconomics* [3]	-
PH	351	Analog Electronics* (WAC)	4
MA	359	Probability and Statistics	3
ME	200	Thermodynamics[2]	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[1]	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

169 - 177 Total Credits

[1-3] used as equivalents for degree reqirements

[+] also required for Physics major