

## Engineering Dual Degree Requirements

### Electrical Engineering & Mathematics

<b>University Core Curriculum</b>			<b>Credits</b>	<b>Common Engineering</b>			<b>Credits</b>
<b>Common Core Requirements</b>				<b>Mathematics</b>			
FYS	101	First Year Seminar	3	MA	106	Calculus & Analytical Geometry 1	-
FYS	102	First Year Seminar	3	MA	107	Calculus & Analytical Geometry 2	-
GHS	201-209	Global and Historical Studies	3	MA	208	Calculus & Analytical Geometry 3	-
GHS	201-209	Global and Historical Studies	3	MA	215	Linear Algebra	-
				MA	334	Differential Equations*	3
<b>General Core Requirements</b>			<b>Credits</b>	<b>Science</b>			<b>Credits</b>
TI	Text and Ideas		3	CH	105	General Chemistry 1	5
PCA	Perspectives in the Creative Arts		3	CH	106	General Chemistry 2	5
SW	The Social World (SW 220-EC) <sup>1</sup>		3	PH	201	Introduction to Analytical Physics 1	5
AR	<i>Analytical Reasoning (exempt)</i>		3	PH	202	Introduction to Analytical Physics 2	5
NW	<i>The Natural World (exempt)</i>		5				
PWB	Physical Well-Being		1	<b>Engineering</b>			<b>Credits</b>
		<b>Core Credits</b>	<b>22(30)</b>	DD	190	Elementary Engineering Design	3
<b>Additional Core Requirements</b>				DD	297	MATLAB	1
BCR	Butler Cultural Requirement		8 events	CS	142	Intro to Computer Science & Prog <sup>+</sup>	3
ICR	Indianapolis Community Requirement		1 course	<b>Other</b>			<b>Credits</b>
SAC	Speaking Across the Curriculum		1 course	COM	101	Rhetoric and the American Demo	3
WAC	Writing Across the Curriculum		1 course	TCM	250	Career Planning for Engineers	1
<b>Liberal Arts and Science Requirements</b>			<b>Credits</b>	TCM	360	Comm in Engineering Practice (WAC/SAC)	2
Foreign Language (min 6 cr 200 level or above)			6-14	ENGR	200	Engineering Internship	1
Spanish, French, German, Chinese, Latin							<b>Credits</b>
		<b>Credits</b>	<b>28-36</b>				<b>37</b>
<b>Mathematics</b>			<b>Credits</b>	<b>Electrical Engineering</b>			<b>Credits</b>
MA	106	Calculus & Analytic Geometry 1	4	ECON	201	Microeconomics <sup>1</sup>	-
MA	107	Calculus & Analytic Geometry 2	4	PH	351	Analog Electronics (WAC)	4
MA	208	Calculus & Analytic Geometry 3	4	ME	295	Mechanics and Heat	3
MA	108	First-Year Problem Solving	1	ECE	202	Circuit Analysis II	3
MA	200	Basics of Advanced Mathematics	3	ECE	208	Electronic Devices & Design Lab	1
MA	205	Discrete Mathematics**i	3	ECE	210	Sophomore Seminar	1
MA	215	Linear Algebra	3	ECE	255	Intro to Electronics Analysis & Design	3
MA	312	Algebra: Groups	3	ECE	264	Advanced C Programming	2
MA	326	Analysis: Theory of Calculus (WAC)	3	ECE	270	Digital Logic Design	4
MA	330	Complex Analysis	3	ECE	301	Signals and Systems	3
Restricted Elective (choose 1)			3	ECE	302	Probabilistic Methods*	3
MA	313	Algebra: Rings and Fields		ECE	311	Electric and Magnetic Fields	3
MA	327	Analysis: Lebesgue Integral		ECE	362	Microprocessors Systems & Interface	4
Math Electives (*credits used toward 9 cr req)			3	ECE	382	Feedback Systems Analysis	3
MA	301	History of Mathematics		ECE	401	Engineering Ethics	1
MA	305	Graph Theory**i		ECE	440	Intro to Communication System Analysis	4
MA	310-399	See Course Catalog		ECE	487	Senior Design I	1
MA	473	Topics in Mathematics		ECE	488	Senior Design II	2
		<b>Credits</b>	<b>37</b>	EE Electives (**credits used toward 15 cr req)			12
						<b>Credits</b>	<b>57</b>
<b>159 - 167 Total Credits</b>							

<sup>1</sup> used as equivalents for degree requirements

+ also required for Mathematics major

i MA 205 &amp; MA 305 (or CS 252) must both be taken to fulfill one 3cr EE elect