

Engineering Dual Degree Requirements

Biomedical Engineering & Mathematics

University Core Curriculum				Common Engineering			
Common Core Requirements				Mathematics			
FYS	101	First Year Seminar	Credits 3	MA	106	Calculus & Analytical Geometry 1	Credits -
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	-
General Core Requirements				MA	334	Differential Equations*	3
TI	Text and Ideas		Credits 3	Science			
PCA	Perspectives in the Creative Arts		3	CH	105	General Chemistry 1	Credits 5
SW	The Social World		3	CH	106	General Chemistry 2	5
AR	<i>Analytical Reasoning (exempt)</i>		3	PH	201	Introduction to Analytical Physics 1	5
NW	<i>The Natural World (exempt)</i>		5	PH	202	Introduction to Analytical Physics 2	5
PWB	Physical Well-Being		1	Engineering			
			Core Credits 22(30)	DD	190	Elementary Engineering Design	Credits 3
Additional Core Requirements				DD	297	MATLAB	1
BCR	Butler Cultural Requirement		8 events	CS	142	Intro to Computer Science & Prog ⁺	3
ICR	Indianapolis Community Requirement		1 course	Other			
SAC	Speaking Across the Curriculum		1 course	COM	101	Rhetoric and the American Demo	Credits 3
WAC	Writing Across the Curriculum		1 course	TCM	250	Career Planning for Engineers	1
Liberal Arts and Science Requirements				TCM	360	Comm in Engineering Practice (WAC/SAC)	2
Foreign Language (min 6 cr 200 level or above)			Credits 6-14	ENGR	200	Engineering Internship	1
Spanish, French, German, Chinese, Latin			Credits 28-36	Credits 37			
<hr/>				<hr/>			
Mathematics				Biomedical Engineering			
MA	106	Calculus & Analytic Geometry 1	Credits 4	CH	351	Organic Chemistry 1	Credits 5
MA	107	Calculus & Analytic Geometry 2	4	CH	352	Organic Chemistry 2	5
MA	208	Calculus & Analytic Geometry 3	4	BI	210	Genetics	4
MA	108	First-Year Problem Solving	1	BI	220	Cellular and Molecular Biology	4
MA	200	Basics of Advanced Mathematics	3	BI	433	Advanced Cell Biology	4
MA	205	Discrete Mathematics	3	BME	222	Biomeasurements	4
MA	215	Linear Algebra	3	BME	241	Biomechanics	4
MA	312	Algebra: Groups	3	BME	322	Probability & Statistics for BME*	3
MA	326	Analysis: Theory of Calculus (WAC)	3	BME	331	Biosignals and Systems	3
MA	330	Complex Analysis**	3	BME	334	Biomedical Computing	3
Restricted Elective (choose 1)			3	BME	352	Cell/Tissue Behavior & Properties	3
MA	313	Algebra: Rings and Fields	3	BME	354	Probs in Cell/Tissue Behavior & Prop	1
MA	327	Analysis: Lebesgue Integral	3	BME	381	Implantable Materials & Biological Resp	3
Math Electives (*credits used toward 9 cr req)			3	BME	383	Probs in Implant Materials & Bio Resp	1
MA	301	History of Mathematics	3	BME	402	Senior Seminar in BME	1
MA	305	Graph Theory [^]	3	BME	411	Quantitative Physiology	3
MA	310-399	See Course Catalog	3	BME	442	Biofluid & Biosolid Mechanics	3
MA	473	Topics in Mathematics	3	BME	461	Transport Processes in Biomedical Engr	3
			Credits 37	BME	491	Biomedical Engineering Design I	3
174 - 182 Total Credits				BME	492	Biomedical Engineering Design II	3
				BME	Elective ⁱ		3
				BME	/Tech Elective ⁱ		3
				BME	/Sci/Tech Elect ⁱ (**credits used toward 6cr req)		3
							Credits 72

+ also required for Mathematics major

[^] CS 252 accepted as equivalent

ⁱ BME/Sci/Tech electives must be selected in consultation with an advisor to form an appropriate Depth Area